

JVC

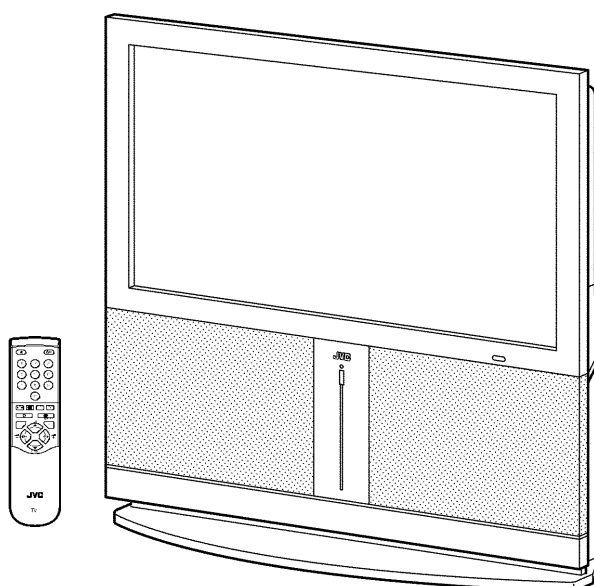
SERVICE MANUAL

PLASMA WIDE TELEVISION

AV42PD20ES

BASIC CHASSIS

MF



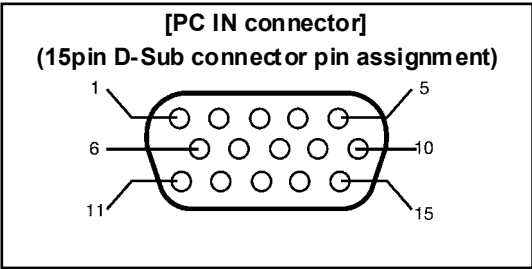
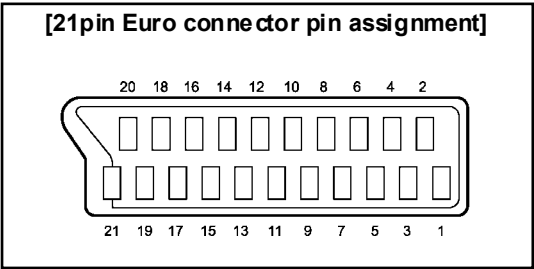
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SPECIFICATIONS

Item		CONTENTS
Dimensions (W × H × D)		104.8cm × 114.0cm × 35.8cm
Mass		58.0kg
TV RF System		CCIR B/G, I, D/K, L ,L'
Colour System		PAL / SECAM & NTSC 3.58 / NTSC 4.43 (NTSC play back only)
Sound System		A2 (B/G, D/K), NICAM (B/G, I, D/K, L)
Teletext System		Fastext(United Kingdom system), TOP(German system), WST(World standard system)
Receiving Frequency	VHF	47MHz ~ 470MHz
	UHF	470MHz~862MHz
	French CATV	116MHz~172MHz / 220MHz~469MHz
Intermediate Frequency	VIF Carrier	38.9MHz(B/G, D/K, I, L) / 33.95MHz(L')
	SIF Carrier	33.4MHz(5.5MHz : B/G) / 32.9MHz(6.0MHz : I) 32.4MHz(6.5MHz : D/K, L) / 40.45MHz(6.5MHz : L')
Colour Sub Carrier	PAL	4.43MHz
	SECAM	4.40625MHz / 4.25MHz
	NTSC	3.58MHz / 4.43MHz (play back)
Power Input		AC 220V~240V , 50Hz
Power Consumption		380W ,2A (Max.) / 280W (Avg.) / 5.5w (Stand by)
PDP Size	Visible area	105.7cm, [Measured diagonally]
Speaker		8cm round × 2, 16cm round × 1 (sub woofer) / 4Ω
Audio Output	Rated	5W + 5W (L+R) / 20W(sub woofer)
Antenna Input		75 Ω unbalanced, Coaxial
Input / Output Terminals	EXT-1	21-pin Euro connector (SCART socket), Video, Audio L/R, RGB signal input are available TV broadcast output (Video and Audio L/R) are available
	EXT-2	21-pin Euro connector (SCART socket), S-Video, Video, Audio L/R, RGB signal input are available AV selector (TV LINK) function is available
	EXT-3	21-pin Euro connector (SCART socket), Video, Audio L/R, RGB signal input are available
	EXT-4	RCA pin type, S-Video, Video and Audio L/R signal input are available
	Audio output	RCA pin type, Variable audio L/R output are available
PC Input		D-Sub 15pin × 1 / signal (R, G, B / H&V SYNC)
Headphone Jack		Stereo minijack (ϕ 3.5mm)
Remote Control Unit		RM-C59 (AAA/R03 dry cell battery×2)

Design and specifications are subject to change without notice.



■ 21-PIN EURO CONNECTOR (SCART socket) : EXT-1 / EXT-2 / EXT-3

(P-P= Peak to Peak, S-W= Sync tip to white peak, B-W= Blanking to white peak)

Pin	Signal Designation	Matching Value	EXT-1	EXT-2	EXT-3
1	AUDIO R output	500mV(rms), Low impedance	○ (TV OUT)	○ (LINE OUT)	NC
2	AUDIO R input	500mV(rms) High impedance	○	○	○
3	AUDIO L output	500mV(rms), Low impedance	○ (TV OUT)	○ (LINE OUT)	NC
4	AUDIO GND		○	○	○
5	GND (B)		○	○	○
6	AUDIO L input	500mV(rms), High impedance	○	○	○
7	B input	700mV(B-W), 75Ω	○	○	NC
8	FUNCTION SW (SLOW SW)	Low : 0V-3V, High : 8V-12V, High impedance	○	○	○
9	GND (G)		○	○	○
10	SCL1		NC	○	NC
11	G input	700mV(B-W), 75Ω	○	○	NC
12	SDA1		NC	○	NC
13	GND (R)		○	○	○
14	GND (Ys)		○	○	NC
15	R / C input	R : 700mV(B-W), 75Ω C : 300mV(P-P) 75Ω	○ (only R)	○	○ (only C)
16	Ys input	Low : 0V - 0.4V, High : 1V - 3V, 75Ω	○	○	NC
17	GND(VIDEO output)		○	○	○
18	GND(VIDEO input)		○	○	○
19	VIDEO output	1V(P-P) (Negative going sync), 75Ω	○ (TV)	○ (LINE OUT)	NC
20	VIDEO / Y input	1V(P-P) (Negative going sync), 75Ω	○ (only VIDEO input)	○	○
21	COMMON GND		○	○	○

■ 15-PIN D-SUB CONNECTOR (PC IN connector)

Each type signal of computer

Model	Resolution	Horizontal Frequency [kHz]	Vertical Frequency [Hz]
IBM PC/AT compatible	640×480 (VGA)	31.5	59.9
		37.9	72.8
		37.5	75.0
		43.3	85.0
		51.1	100.4
		61.3	120.4
	800×600 (SVGA)	35.2	56.3
		37.9	60.3
		48.1	72.2
		46.9	75.0
		53.7	85.1
		63.0	99.8
		75.7	120.0
	1024×768 (XGA)	48.4	60.0
		56.5	70.1
		60.0	75.0
		68.7	85.0
		80.5	100.6
Apple Macintosh	640×480	35.0	66.7
	832×624	49.7	74.6
	1024×768	60.2	74.9
	1152×870	68.7	75.1

PC IN connector [15pin D-sub pin assignment]

Pin No.	Signal Name	Details
1	RED	Red video signal
2	GREEN	Green video signal
3	BLUE	Blue video signal
4	—	Not connected
5-8	GND	Signal earth
9	—	Not connected
10	GND	Signal earth
11	—	Not connected
12	—	—
13	HSYNC	Horizontal synchronous signal
14	VSNC	Vertical synchronous signal
15	—	—

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (≡) side GND and EARTH : (⊕) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the PDP voltage setting should be checked or adjusted.
6. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

7. Isolation Check

(Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1500V AC (r.m.s.) for a period of one second.

This method of test requires a test equipment not generally found in the service trade.

(2) Leakage Current Check

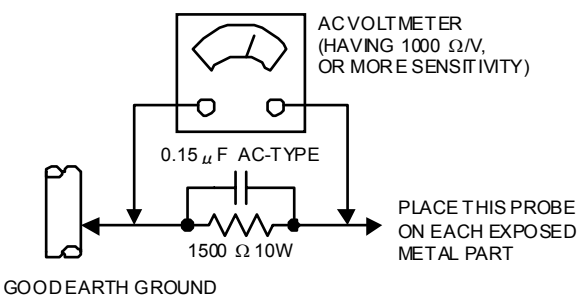
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 3.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having $1000\Omega/V$ or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a $0.15\mu F$ AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 3.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



SAFETY PRECAUTIONS **[UK MODEL]**

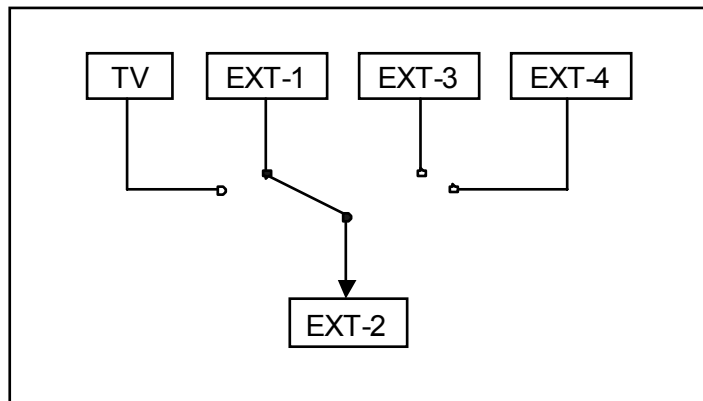
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2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessary be obtained by using replacement components rated for wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may cause shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubing's, barriers and the like to be separated from live parts, high temperature parts, moving parts and / or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

WARNING

1. The equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

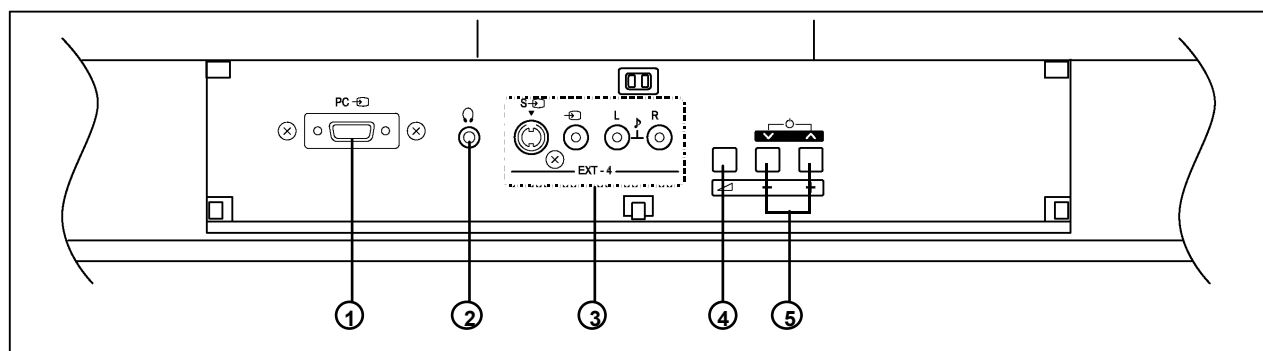
FEATURES

- New chassis design enable use of an interactive on screen control.
- The TELETEXT SYSTEM has a built-in FASTEXT (UK system), TOP (German system) and WST (world standard system) system.
- Pure FLAT PANEL reproduce fine textured.
- Because this TV unit corresponds to multiplex broadcast, users can enjoy music programs and sporting events with live realism.
- In addition, BILINGUAL programs can be heard in their original language.
- Built-in ECO (ECONOMY, ECOLOGY) sensor MODE.
In accordance with the brightness in a room, the brightness and/or contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.
- Users can make VCR dubbing of picture and sound by controlling the AV selector to select an optional source at the EXT-2 output shown in figure.



FUNCTIONS

FRONT TERMINAL



■FUNCTION NAME

① PC IN CONNECTOR (15pin D-sub connector)

② HEADPHONE JACK (MINI JACK)

③ EXIT-4 TERMINAL

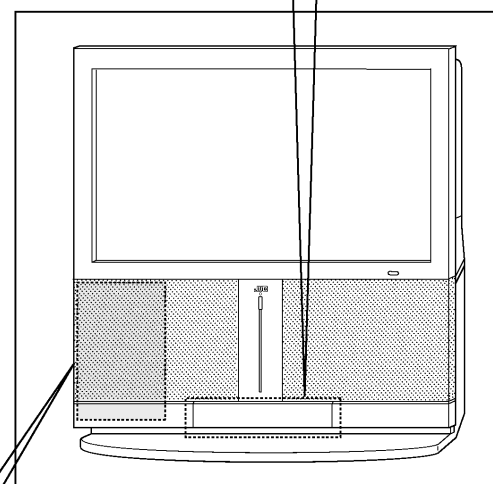
④ VOLUME (▲) BUTTON

Press this button to display the volume level indicator.

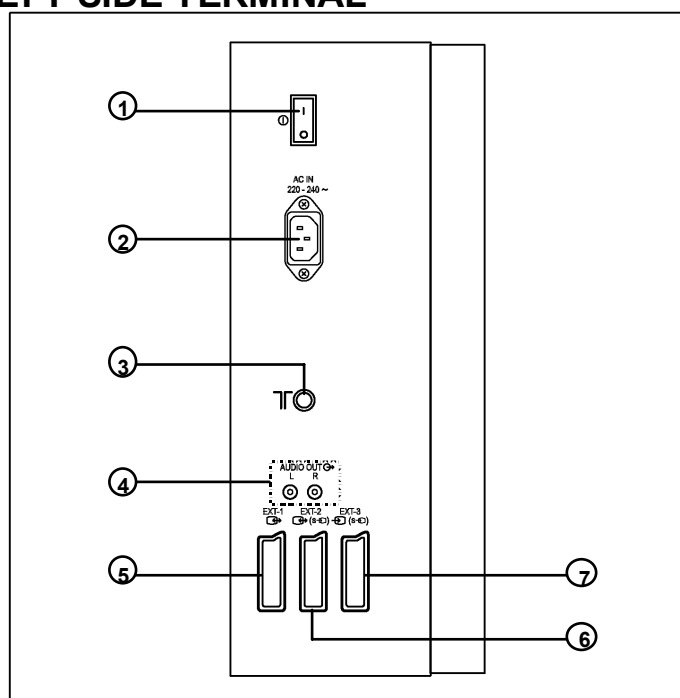
Press the ⑤ up/down (V/Δ) buttons to change volume while the volume level indicator is displayed.

⑤ V/Δ (UP/DOWN) BUTTONS

You can use this button as the V/Δ buttons of the PR channel. Pressing the ④ volume button makes this button function as the volume +/- buttons.



LEFT SIDE TERMINAL



■FUNCTION NAME

① MAIN POWER SW

② AC INLET

③ AERIAL SOCKET

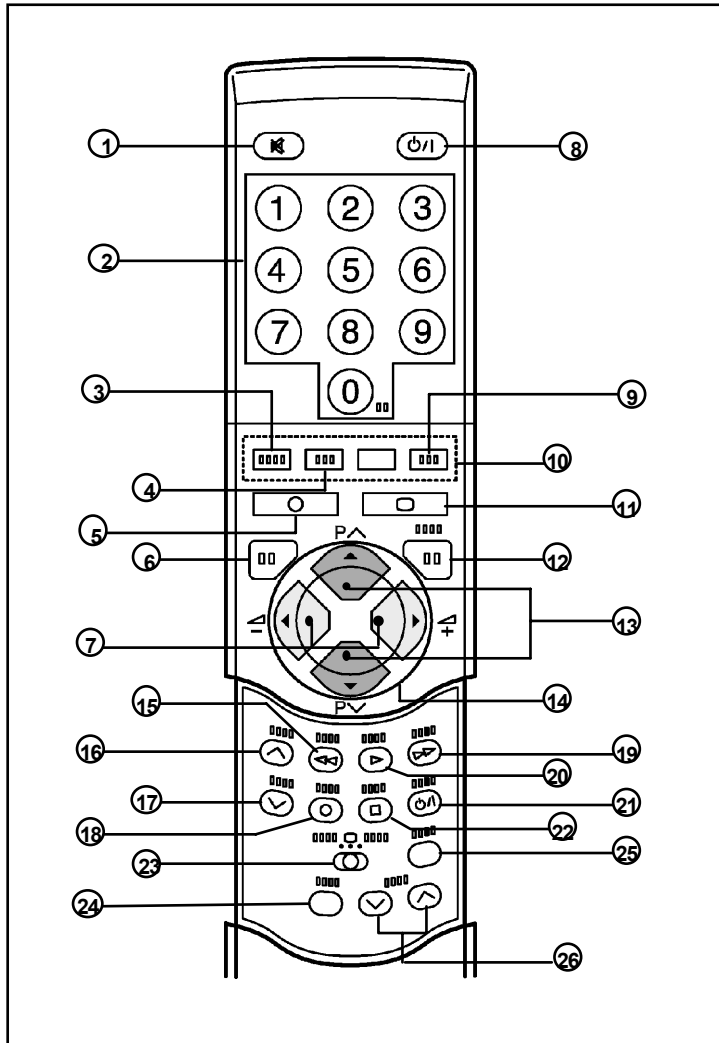
④ AUDIO OUT (L, R) TERMINAL

⑤ EXT-1(IN/OUT) TERMINAL












⑥ EXT-2(IN/OUT) TERMINAL

⑦ EXT-3(IN) TERMINAL

REMOTE CONTROL UNIT



■ FUNCTION NAME

①	MUTING Key ()
②	NUMBER (ten) Key
③	ZOOM Key
④	HYPER SOUND Key
⑤	INFORMATION Key ()
⑥	TV Key
⑦	VOLUME +/- Key
⑧	STAND-BY Key (POWER)
⑨	PIP Key
⑩	COLOUR Key
⑪	TEXT Key ()
⑫	MENU / OK Key
⑬	PR CHANNEL UP/DOWN (▲/▼) Key
⑭	FUNCTION (◀/▶ & ▲/▼) Key
⑮	MODE Key (F. T/L) : LIST ↔ FLOF/TOP
⑯	HOLD Key ()
⑰	SUB PAGE Key ()
⑱	STORE Key ()
⑲	SIZE Key ()
⑳	REVERSAL Key ()
㉑	INDEX Key ()
㉒	DISPLAY CANCEL Key ()
㉓	TV / TEXT / DVD Key
㉔	CHANGE Key ()
㉕	FREEZE Key
㉖	SUB-PAGE (▲/▼) Key

TECHNICAL INFORMATION

PDP (PLASMA DISPLAY PANEL) DESCRIPTION

■ CAUTION

Although a PDP is made with highly advanced precision, this does not necessarily mean all of the cells operate correctly. The PDP inevitably includes cell that do not light or light constantly.

If the specifications (PDP performance) are unclear at the time of shipment, an adequate description cannot be conveyed to the customer. In event of inquiries from customers regarding PDP performance, check the following specifications in order to offer a suitable reply.

■ CELL ARRANGEMENT

The PDP is constructed of front and rear glass substrates provided with respective discharge electrodes. Between these, neon for discharging and xenon for generating ultraviolet rays are enclosed.

One picture element (pixel) is composed of Red, Green and Blue (RGB) cells. The cell pitch is 0.36 mm horizontal (1.08 mm per pixel) by 1.08mm vertical.

As shown in Fig.1, the cells are arranged for each R/G/B colour. A pixel consists of each cell of R/G/B/ colour.

The size of a cell is 0.36mm horizontally and 1.08mm vertically.

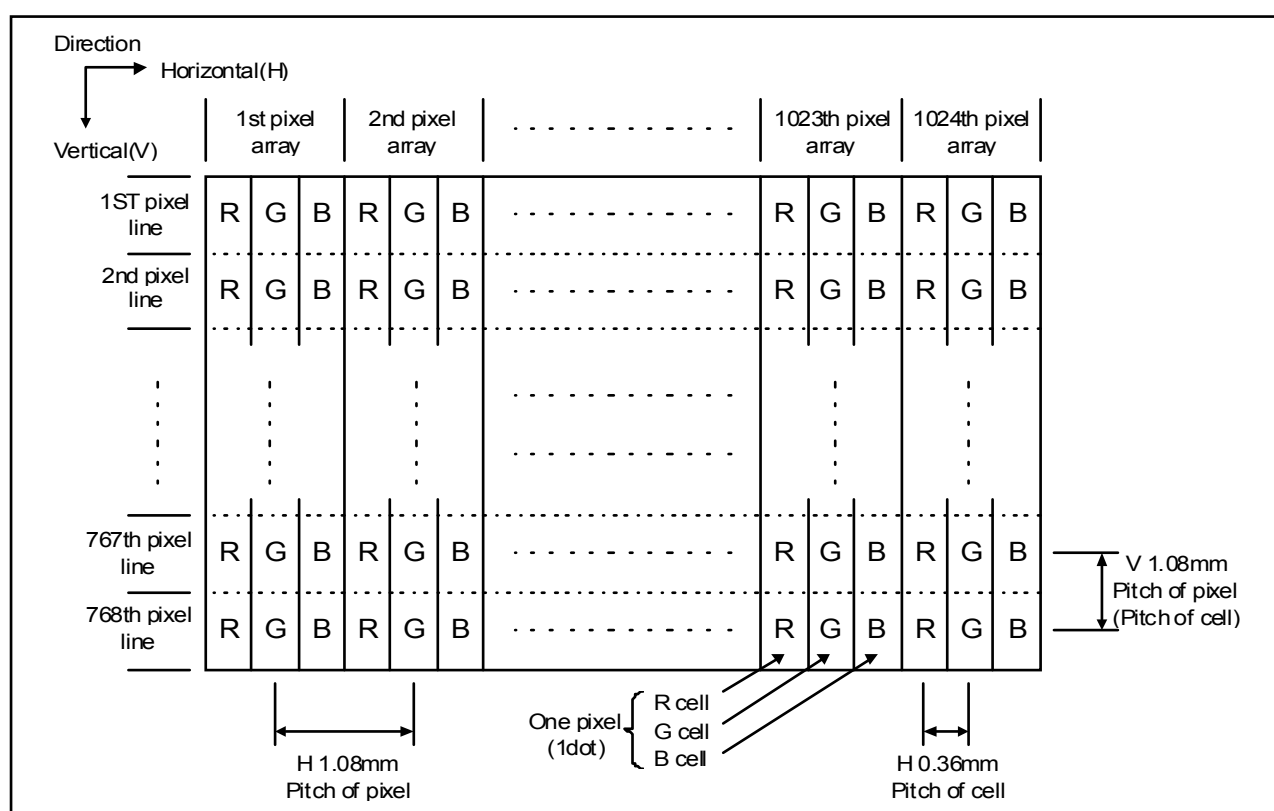


Fig. 1 PIXEL (CELL) ARRANGEMENT

■ PIXEL FAULT

There are two pixel faults - bright fault and dark fault - that are respectively defined as follows.

(1) BRIGHT FAULT

In this pixel fault, a cell that should not light originally is lighting or flashing on and off.

For checking this pixel fault, input ALL BLACK SCREEN and find out the cell that is lighting or flashing on and off.

(2) DARK FAULT

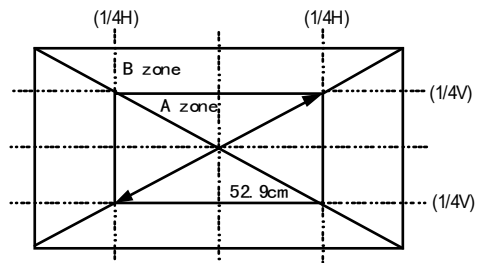
In this pixel fault, a cell that should light originally is not lighting or not flashing on and off or lighting with the brightness twice as brighter as originally lighting.

For checking this pixel fault, input 100% of each RGB colour and find out the cell that is not lighting or not flashing on and off or lighting with the brightness as brighter as originally lighting.

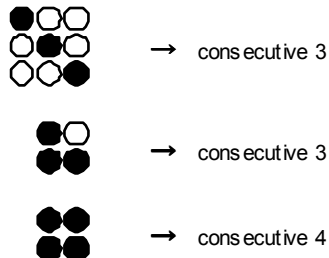
(3) PIXEL FAULT SPECIFICATION

	Screen display	Criteria for number of faulted cell	Criteria for number of consecutive faulted cell
Bright fault	All black screen	A zone: 2 or less than 2 in each colour B zone: 3 or less than 3 in each colour	2 or Less than 2 consecutively
Dark fault	Red level 100% on entire screen	A zone: 3 or less than 3 in each colour B zone: 8 or less than 8 in each colour	2 or Less than 2 consecutively
	Green level 100% on entire screen		
	Blue level 100% on entire screen		

(Note) A-zone : Center portion
(area enclosed by 1/4 vertically from the top and bottom and 1/4 horizontally from the right and left sides.)
B-zone : Other area



(Note) The consecutive pixel fault that are diagonally or intensively generated shall be interpreted as follows :



INSTALLATIONS

1. SAFETY PRECAUTION FOR PDP OPERATION

- (1) Do not prevent the radiation of heat from back, top and flank sides of a PDP.

Preventing the radiation of heat from each side causes high temperature within a PDP and may damage the inner circuit.

- (2) Install a PDP in a place where is well ventilated.

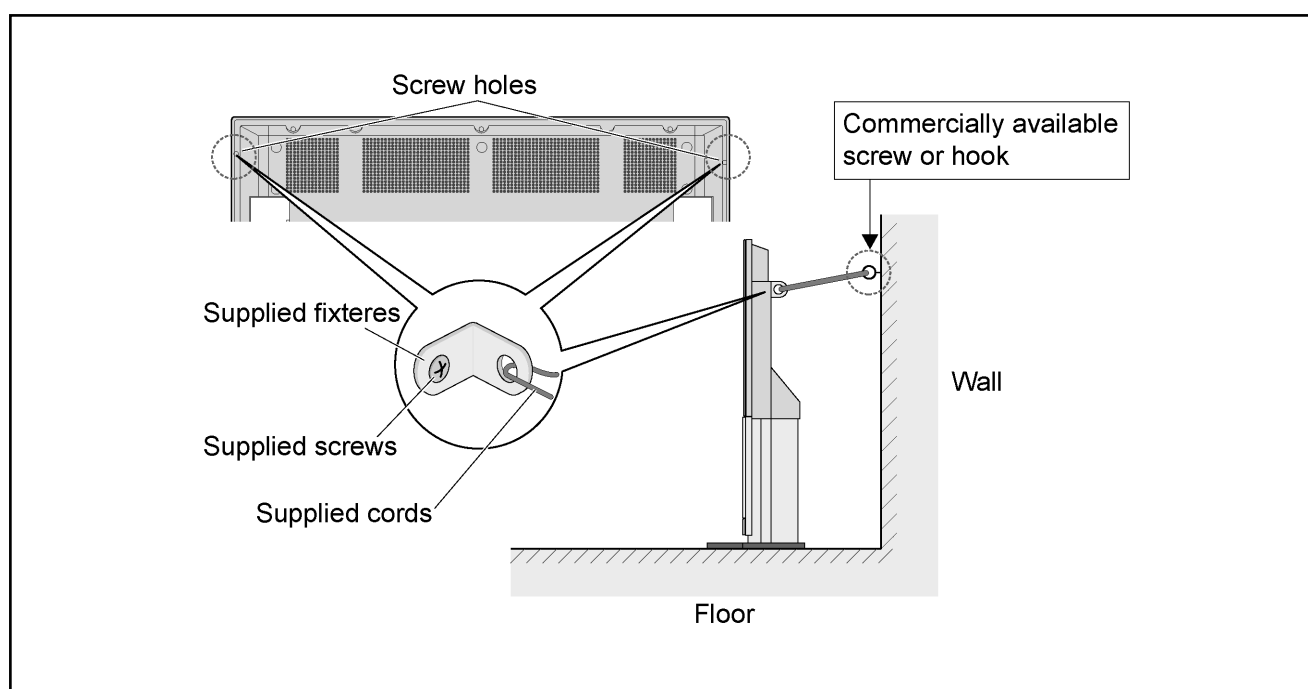
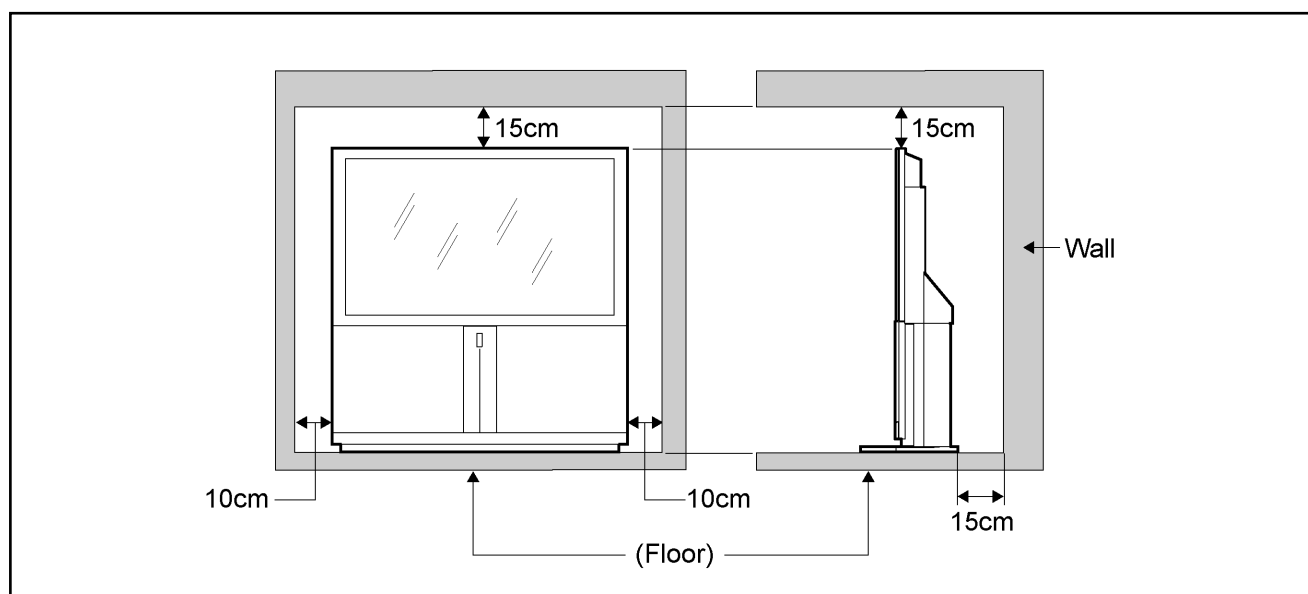
Ambient temperature should be within a range of **0~40°C**.

- (3) Install in not dusty place. If dust covers the air intake holes, inside ventilation effect will reduce. Then, it may damage the inner circuit.

If the unit uses in such atmosphere, it will strongly require regular cleaning or maintenance.

2. REQUIREMENTS FOR SETTING

The following minimum space must be kept when a PDP is installed.



SPECIFIC SERVICE INSTRUCTIONS

PRECAUTIONS FOR PDP USE

1. PRECAUTION DURING TRANSPORTATION

When this unit is delivered, the PDP body inside of the box will be subject to constant of gravitation under the rough handling (throwing, dropping, etc.) even though a rigid box is used. In such a case, the PDP may be damaged during transportation. In order to avoid an accident during transportation, care must be taken to select a reliable carrier. Once a reliable carrier is selected, advise them how to handle a PDP properly during transportation. In addition, a PDP should be insured for its physical damage before shipment.

This product is fragile because glass is widely used. Thus the following requirements for transportation should be observed.

(1) Don't apply vibration and impact.

The glass of a PDP may be broken when the package is brought down on its side. When carrying the package, it must always be handled with two persons with due care not to apply vibration and impact on the package.

(2) Don't lay a PDP on its side.

A PDP should always be placed upright during both transportation and safekeeping. Don't lay it on its side. The panel of a PDP is very fragile to the impact in the horizontal direction.

When a car carries a PDP, load it on board the car in parallel with the moving direction of the car. Don't lay several PDPs one on top another.

During safekeeping, don't lay more than two PDPs one on top another even if they are kept upright.

2. RETAINED-IMAGE AND BURNING

(1) When the same pattern is displayed continuously for many hours, the burning of the screen is occurred in the same manner as for a CRT. This will shorten the service life of a PDP. In order to avoid the burning of the screen, turn the display off when not necessary. Also take such other measures as scrolling the screen and using a screen saver. In addition, periodically display the brightness reversal, the reversal to the complementary colour or the insertion of animated image - all these will make the display on the screen uniform. Since the higher brightness may cause the burning, users are requested to use neutral colours as much as possible. Animated image will not cause the burning.

(2) When the screen is switched after continuous display, the retained-image may be significant because the brightness of a certain portion becomes higher than that of other portions. This is caused by a phenomenon in which a surface electrical discharge of the lighted portion is more activated than the non-lighted portions, resulting in higher brightness.

(3) This unit has functions such as "PIXEL SHIFT", "COLOUR-REVERSE" and "REFRESH". They will reduce burning. Please refer to the instruction book for detail.

3. INFRARED RAYS

Because the near infrared rays (800~1000nm) radiate from the panel face, the neighboring infrared ray remote controllers, infrared communication systems, etc. may malfunction. In these cases, take a measure to prevent the trouble to be caused by direct rays (or reflected rays) from the screen by changing the direction of the screen face or keeping a safe distance between a PDP and other devices.

4. OPTICAL FILTER (FRONT FILTER)

(1) Don't expose the optical filter directly to the sun for a long period of time.

Exposing directly to the sun for a long period of time may change the special property of the optical filter, resulting in a change of colour.

(2) Don't wipe the optical filter with solvents such as benzene, thinner, etc.

Wiping the optical filter with solvents such as benzene, thinner, etc. may cause change in quality and peel off the coating on the surface.

Lightly wipe the optical filter with a soft cloth with less fluffy (e.g. pure flannel).

(3) Because the surface of the optical filter is fragile, don't scrub or hit it with a hard material.

5. PRECAUTION DURING CHANGING OF MONITOR UNIT ARMOR PARTS

Extreme care must be exercised for a PDP when the armor parts are changed.

(1) Special attention should be paid not to apply pressure on the MONITOR UNIT glass surface during the work.

(2) Don't touch the panel surface in any way.

(3) When changing the MONITOR UNIT armor parts (rear cover, front panel and optical filter), place the panel (PDP side) upside down in principle. At this time, a suitable mat must be used so as to prevent the front side from damaging. However, excessively soft material (e.g. blanket) should not be used for this purpose in any way. If a blanket is used, the surface of a PDP is pressurized by the blanket when placing the panel upside down.

Under such a condition, the PDP may be broken during the work.

6. OTHER PRECAUTIONS

(1) Brightness change in the screen

In order to save the power consumption, the power is controlled (with APS function) depending on the brightness of the screen. For this, the brightness may change after a short time when the picture of the screen is changed. However, this phenomenon is not a trouble.

(2) Component input setting

The component signals 1080i and 1035i are the same frequencies. So, the unit does not detect the signals automatically.

In this case, set required signal by "HD SIGNAL MODE" in the setup menu.

DISASSEMBLY PROCEDURE

SEPARATION

SEPARATING THE PDP MONITOR UNIT AND LOWER BLOCK

[1] REMOVING THE BACK COVER

1. Remove the 5 screws marked **A** as shown in Fig.2.
2. Remove the 2 screws marked **B** as shown in Fig.2.
3. Remove the 3 screws marked **C** as shown in Fig.2.
4. Remove the back cover toward you.

[2] REMOVING THE SIDE COVER

5. Remove the 3 screws marked **D** as shown in Fig.2.
6. Remove the 2 screws marked **E** as shown in Fig.2.

[3] REMOVING THE BACK STAY

7. Remove the side cover.
8. Remove the 2 screws marked **F** as shown in Fig.2.

[4] SEPARATING THE MONITOR UNIT LOWER BLOCK

9. Remove the 2 screws marked **G** as shown in Fig.2.
10. Separate the MONITOR UNIT and LOWER BLOCK as shown in Fig.2.

* This separation should be performed by 2 or more persons.

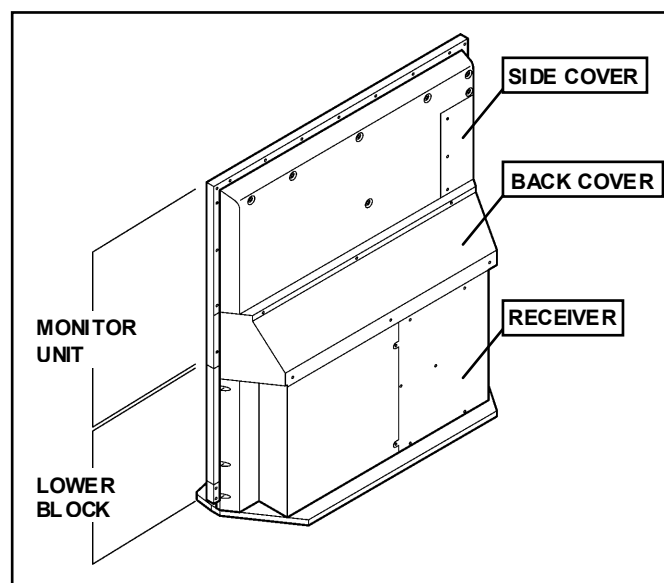


Fig. 1

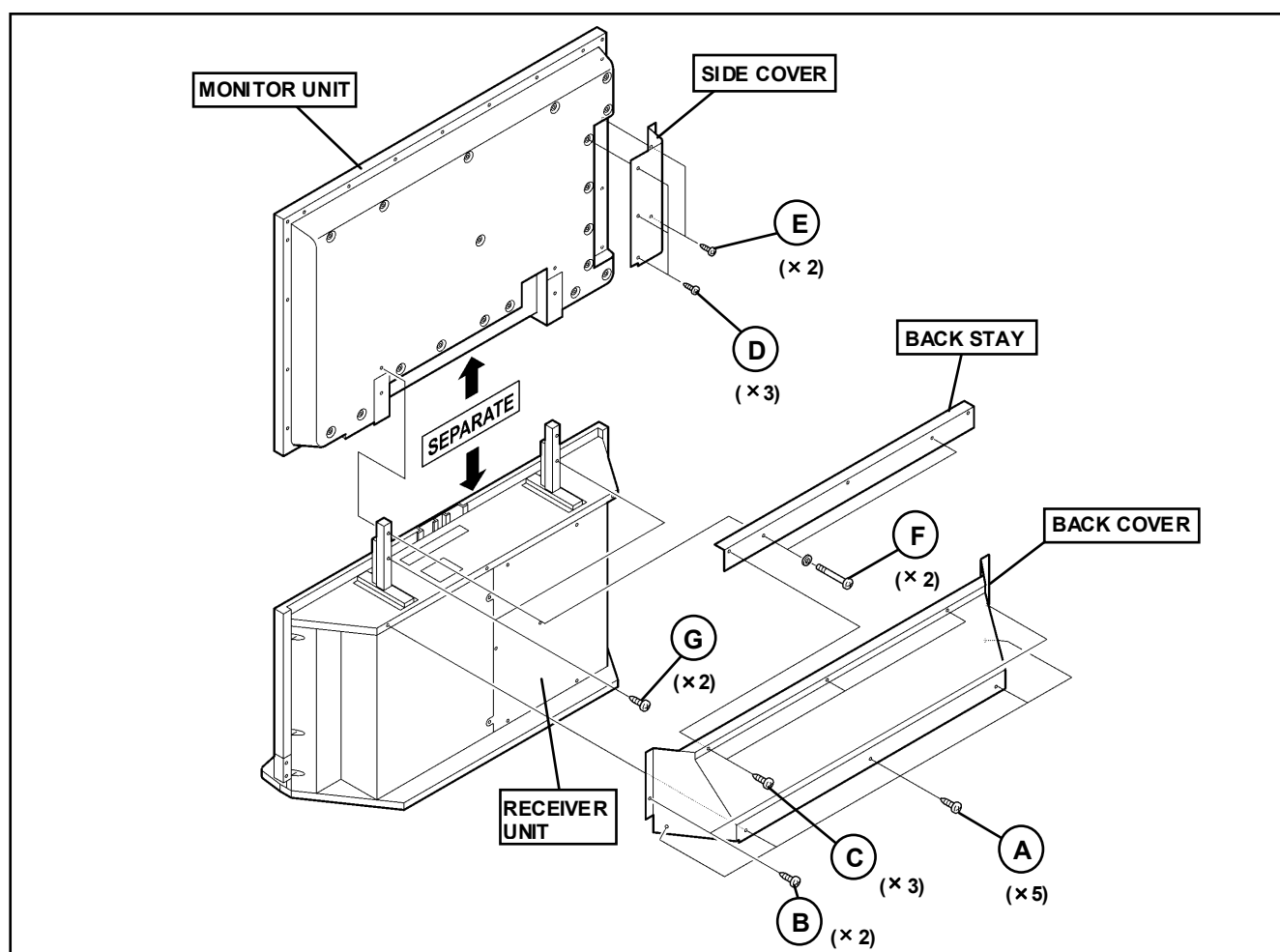


Fig. 2

LOWER BLOCK

REMOVING THE LOWER BLOCK

[NOTE]

The periphery of the receiver unit is a wooden cabinet. When the receiver unit is removed, hold it up slightly with both hands and put a mat or the like (cardboard, etc.) under the receiver unit so as to prevent scratching the cabinet during the removal work. Then remove the receiver unit by withdrawing it toward you.

[1] REMOVING THE RECEIVER UNIT

1. Remove the **4** screws marked **A** as shown in Fig.3.
2. Slightly raise the both sides of the receiver unit by hand and remove the receiver unit toward you.
 - * Thus the connector should be securely inserted when the receiver unit is installed again.
3. Unplug the connectors from the receiver unit.
4. Withdraw the receiver unit backward.

[2] REMOVING THE CASE COVER OF THE RECEIVER UNIT

- Take out the RECEIVER UNIT.
1. Remove the **10** screws marked **A** as shown in Fig.4.
 2. Withdraw the case cover toward you from chassis case.

[3] REMOVING THE AV PLATE AND CHASSIS BEAM

- Take out the RECEIVER UNIT.
 - Take out the CASE COVER.
1. Remove the **6** screws marked **B** as shown in Fig.4.
 2. Unplug the connectors from the AV PLATE
 3. Withdraw the AV PLATE toward you.
 4. Remove the **2** screws marked **C** as shown in Fig.4.
 5. Withdraw the chassis beam toward you from chassis case.

[4] REMOVING THE UNDER PANEL (L&R)

- Take out the RECEIVER UNIT.
1. Remove the **2** screws marked **D** (L&R) as shown in Fig.5.
 2. Remove the **4** screws marked **H** (L&R) as shown in Fig.5.
 3. As shown Fig.5, remove the under panel (L&R) in the arrow direction marked **I**.

[5] REMOVING THE FRONT CONTROL PWB

- Take out the RECEIVER UNIT.
4. Remove the **3(2+1)** screws marked **A** as shown in Fig.5.
 5. Remove the **6** screws marked **B** on the FRONT CONTROL PWB as shown in Fig.5.
- * If necessary, take off the wire clamp, connectors, etc.

[6] REMOVING THE SPEAKER NET / CENTER PANEL / FRONT SW PWB / SW LEVER

1. Remove the **4** screws marked **C** (L&R side) as shown in Fig.5.
2. Then withdraw the SPEAKER NET toward you.
3. Remove the **4** screws marked **E** as shown in Fig.5.
4. Then remove the CENTER PANEL / FRONT SW PWB & SW LEVER as shown in Fig.5.

[7] REMOVING THE SPEAKER

- Take out the SPEAKER NET.
1. Remove the **4** screws marked **F** as shown in Fig.5.
 2. Follow the same steps when removing the other hand speaker.
 3. Remove the **4** screws marked **G** as shown in Fig.5.

CHECKING THE PW BOARD

1. To check the back side of the PW BOARD.
 - 1) Pull out the chassis.
 - 2) Erect the chassis vertically so that you can easily check the back side of the PW BOARD.

[CAUTION]

- When erecting the PW BOARD, be careful so that there will be no contacting with other PW BOARD.
- Before turning ON power, make sure that the wire connector is properly connected.
- When conducting a check with power supplied, be sure to confirm that the EARTH WIRE is connected to the PW BOARD and others PW BOARD.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

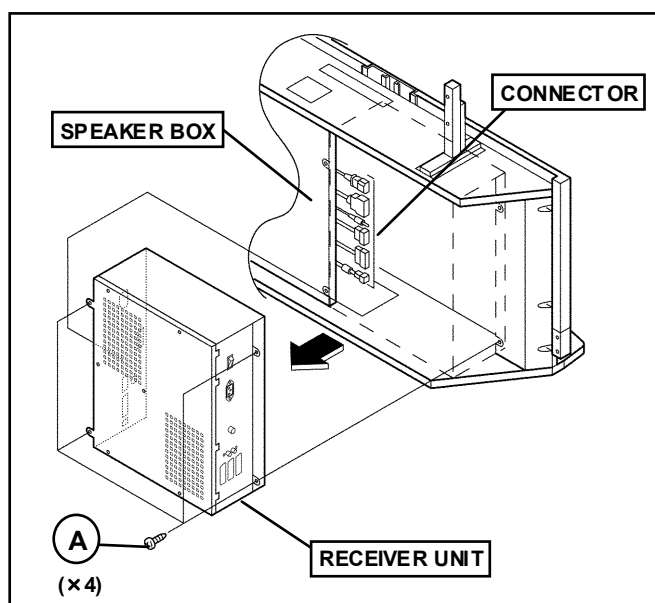


Fig.3

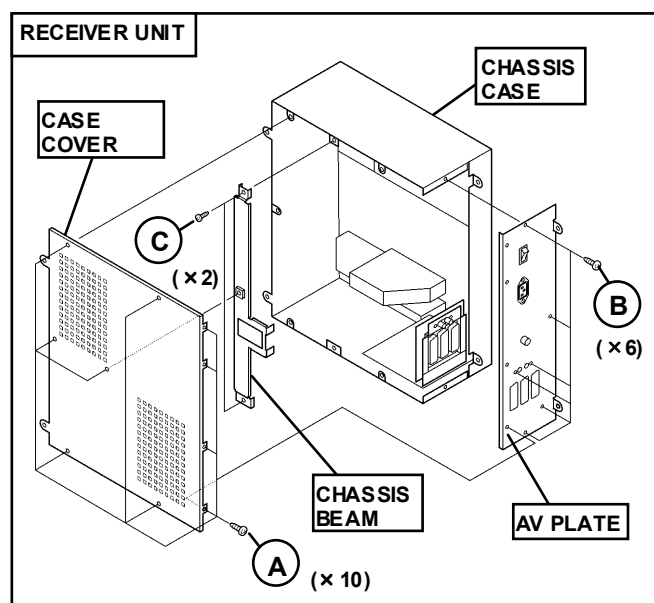


Fig.4

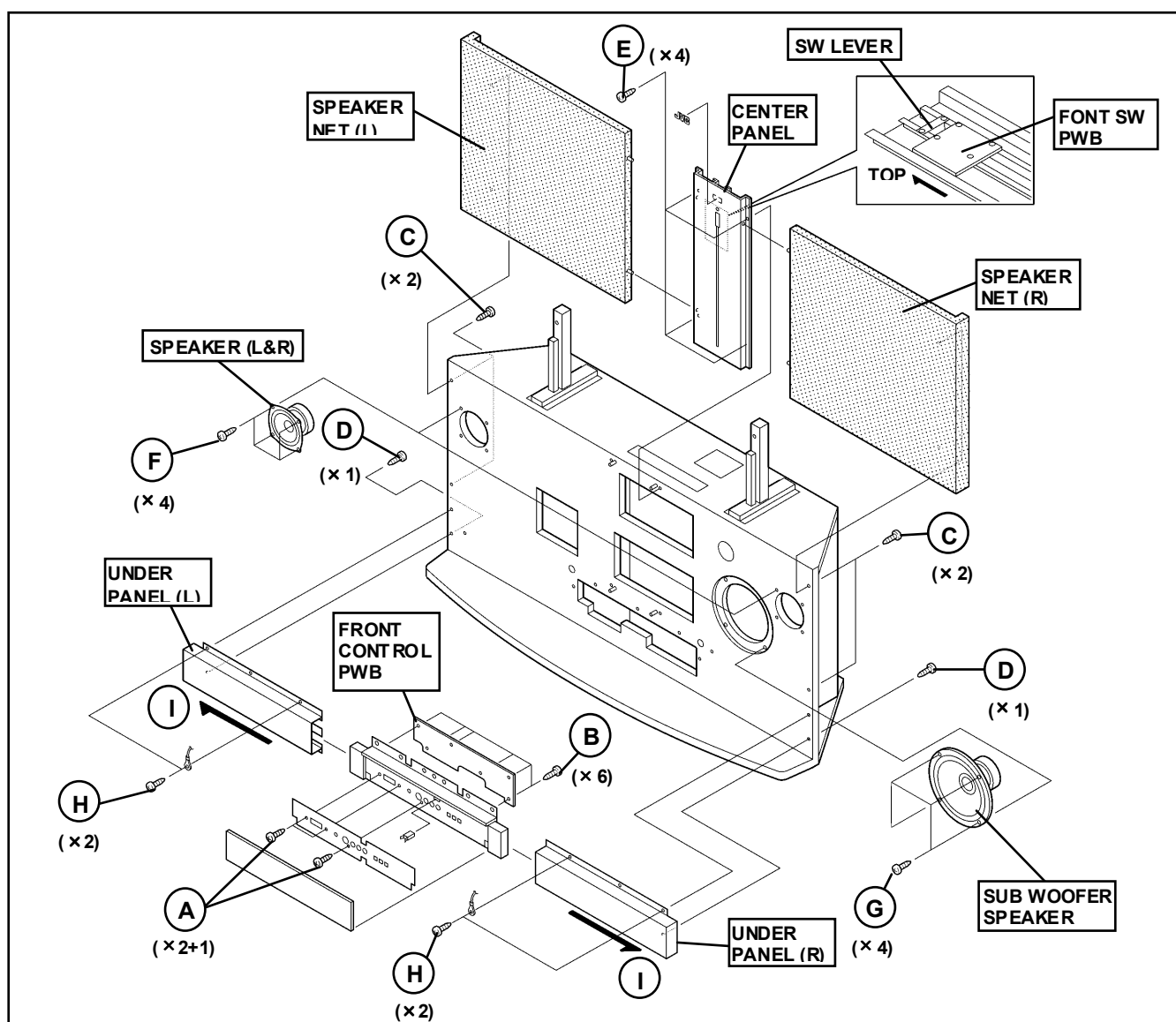


Fig.5

MONITOR UNIT

REMOVING THE MONITOR UNIT

[1] REMOVING THE REAR COVER / SIDE COVER

- * Take out the MONITOR UNIT.
- * Take out the RECEIVER UNIT.
- 1. Remove the 18 screws marked **A** as shown in Fig.1.
- 2. Remove the 17 screws marked **B** as shown in Fig.1.
- 3. Remove the 2 screws marked **C** as shown in Fig.1.
- 4. Remove the 3 screws marked **D** as shown in Fig.1.
- 5. Withdraw the REAR & SIDE COVER toward you.
- * If necessary, take off the wire clamp, connectors, plug, etc.

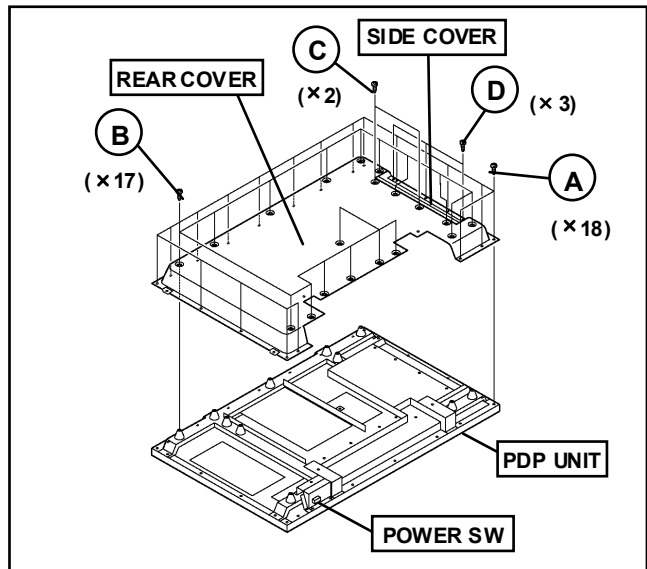


Fig.1

[2] REMOVING THE SW PWB COVER

- Take out the REAR COVER / SIDE COVER.
- 1. Remove the 2 screws marked **A** as shown in Fig.2.
- 2. Remove the 2 screws marked **B** as shown in Fig.2.
- 3. Withdraw the SW PWB COVER toward you.

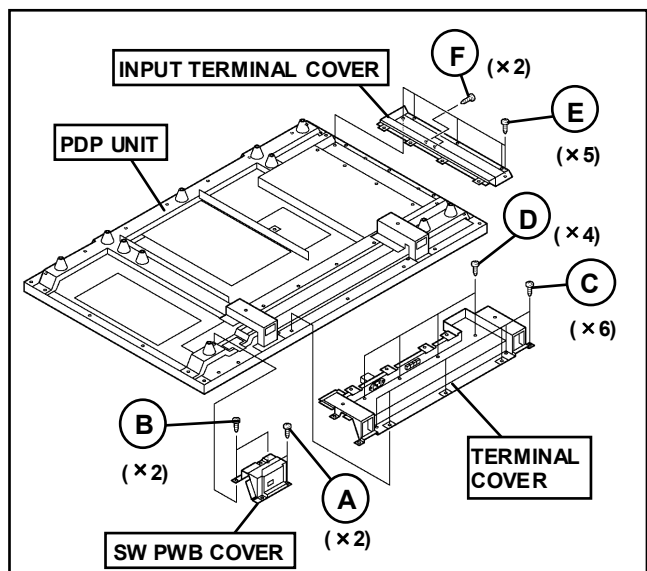


Fig.2

[3] REMOVING THE SPEAKER / TERMINAL COVER

- Take out the REAR COVER / SIDE COVER.
- Take out the SW PWB COVER.
- 1. Remove the 6 screws marked **C** as shown in Fig.2.
- 2. Remove the 4 screws marked **D** as shown in Fig.2.
- 3. Withdraw the SPEAKER and TERMINAL COVER toward you.

[4] REMOVING THE INPUT TERMINAL COVER

- Take out the REAR COVER / SIDE COVER.
- 1. Remove the 5 screws marked **E** as shown in Fig.2.
- 2. Remove the 2 screws marked **F** as shown in Fig.2.
- 3. Pull out the INPUT TERMINAL COVER backward.

[5] REMOVING THE PDP UNIT

- Take out the REAR COVER / SIDE COVER.
- Take out the SW PWB COVER.
- Take out the TERMINAL COVER.
- Take out the INPUT TERMINAL COVER.
- 1. Remove the 6 screws marked **A** as shown in Fig.3.
- 2. Take out the MONITOR UNIT from the FRONT PANEL ASS'Y (with OPTICAL FILTER).
- * The remove of PDP UNIT should be performed by 2 or more persons.

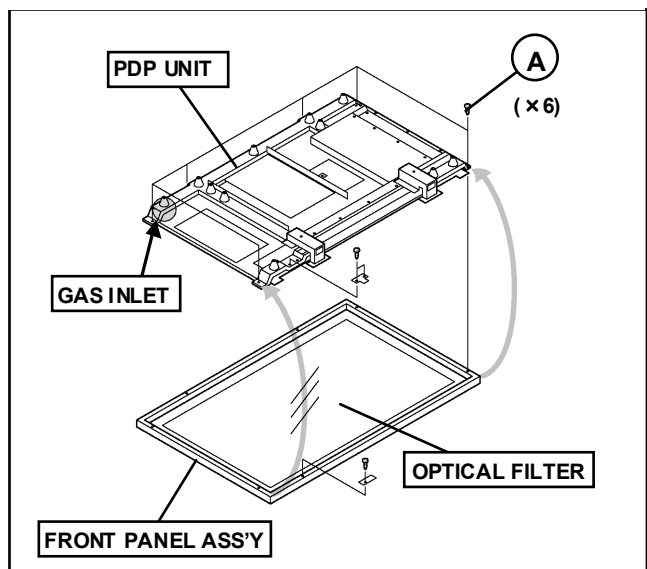


Fig.3

CAUTION : Do not damage the gas inlet !

If the gas inlet is damaged, the PDP UNIT must be replaced.
So extreme care should be taken not to damage the gas inlet when you remove the PDP UNIT.

REPLACEMENT OF MEMORY ICs

1. MEMORY ICs

This TV uses memory IC. In the memory IC, there are memorized data for correctly operating the video and deflection circuits.

When replacing the memory IC, be sure to use an IC written with the initial values of data.

2. PROCEDURES FOR REPLACING MEMORY ICs

PROCEDURE
(1) Power off Switch the power off and disconnect the power plug.
(2) Replace ICs. Be sure to use a memory IC written with the initial setting data.
(3) Power on Connect the power plug and switch the power on.
(4) Check and set SYSTEM CONSTANT SET <ul style="list-style-type: none"> ● The adjustment should not be done without signal. <ol style="list-style-type: none"> 1) Press the INFORMATION key and the MUTING key of the REMOTE CONTROL UNIT simultaneously. 2) The SERVICE MENU screen of Fig. 1 will be displayed. 3) While the SERVICE MENU is displayed, press the INFORMATION key and MUTING key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed. 4) Check the setting values of the SYSTEM CONSTANT SET of Table 1. If value is different, select the setting item with the FUNCTION $\blacktriangle/\blacktriangledown$ key, and set the correct value with the FUNCTION $\blacktriangleleft/\blacktriangleright$ key. 5) Press the MENU(OK) key to memorize the setting value. 6) Press the INFORMATION key, and return to the normal screen.
(5) Setting of receive channels Set the receive channel. For setting, refer to the OPERATING INSTRUCTIONS.
(6) Setting of SERVICE MENU Verify the setting items of the SERVICE MENU of Table 2, and reset where necessary. For setting, refer to the SERVICE ADJUSTMENTS.
(7) User settings Check the user setting values of Table 3, and if setting value is different, set the correct value. For setting, refer to the OPERATING INSTRUCTIONS.

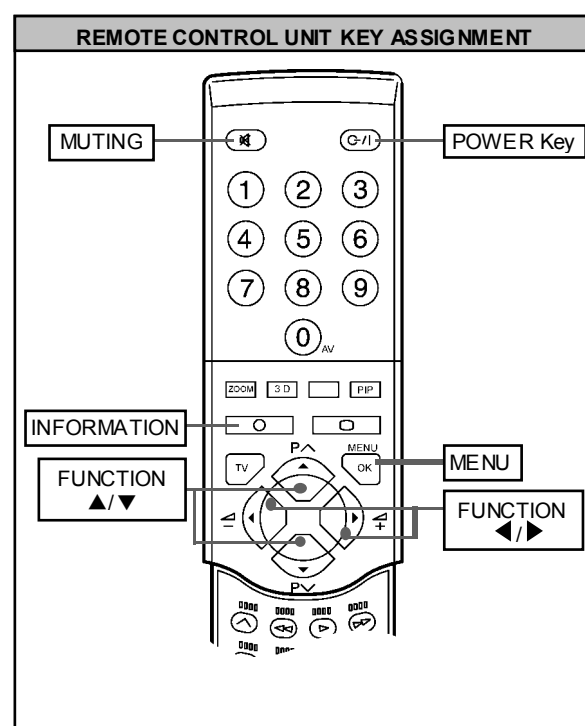
SERVICE MENU	
1. IF	2. V/C
3. AUDIO	4. DEF
5. VSM PRESET	6. STATUS
7. PIP	8. ---
9. SHIPPING (OFF)	0. BUS FREE
1-0 : SELECT i : EXIT	

Fig.1

SYSTEM CONSTANT SET	
1. DESTINATION	E
-A/ : STORE i : EXIT	

Fig.2

2. DIGIPURE PRO	YES
3. PIP	1 TUNER
4. PIC & TEXT	YES
5. TDA9178	YES
6. FLAT	YES



SETTING VALUE OF SYSTEM CONSTANT SET (TABLE 1)

Setting item	Setting content	Setting value
1. DESTINATION	→ EK → EU → EI →	E
2. Digi Pure	→ YES → NO →	YES
3. PIP	→ 1 TUNER → 2 TUNER → NO →	1 TUNER
4. PIC & TEXT	→ YES → NO →	YES
5. TDA9178	→ YES → NO →	YES
6. FLAT	→ YES → NO →	YES

SERVICE MENU SETTING ITEMS (TABLE 2)

Setting item	Setting value	Setting item	Setting value
1. IF	1. VCO 2. ATT [Do not adjust]	4. DEF	1. V-SHIFT 2. V-SIZE 3. H-CENT 4. H-SIZE
2. V / C	1. R. GAIN 2. G. GAIN 3. B. GAIN 4. BRIGHT 5. CONTRAST 6. COLOUR 7. HUE 8. SHARP [Don't move] 9. VCO ADJUSTMENT 10. VIDEO AGC [Don't move] 11. SYNC SLICE [Don't move] 12. A MOVIE [Don't move]	5. VSM PRESET → COOL → NORMAL → WARM →	1. CONT. 2. BRIGHT 3. SHARP 4. COLOUR 5. HUE 6. R. GAIN 7. G. GAIN 8. B. GAIN
3. AUDIO [Do not adjust]	1. ERR LIMIT 2. A2 ID THR	7. PIP [Do not adjust]	1. PIP VCO ADJ 2. PIP VID AGC 3. PIP SNC SLI

USER SETTING VALUE (TABLE 3)

Setting item	Setting value	Setting item	Setting value
SUB POWER	ON	VOLUME	Appropriate sound volume
SHIPPING CHANNEL	PR1	DISPLAY	INDICATED
PRESET CHANNEL	See OPERATING INSTRUCTIONS.	ZOOM MODE	PANORAMIC
PICTURE SETTING		EXT SETTING	
TINT (COLOUR TEMP.)	NORMAL	ID S-IN DUBBING	BLANK BLANK EXT-1→EXT-2
PICTURE FEATURES		FEATURES	
DIGITAL VNR Digi Pure COLOUR SYSTEM 4:3 AUTO ASPECT PIP POSITION	AUTO AUTO TV : According to preset CH EXT : AUTO PANORAMIC RIGHT BELOW	SLEEP TIMER BLUE BLACK CHILD LOCK DECODER (EXT-2)	OFF ON ID : No.0000, ALL CH : OFF * Press the "0" key in CHILD LOCK menu to find to ID No.***. ALL CH : OFF
SOUND SETTING		INSTALL	
TONE BALANCE TV SPEAKER 3D SURROUND	CENTER CENTER L / R OFF	LANGUAGE EDIT	ENGLISH PR CHANNEL ONLY OTHERS : BLANK

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

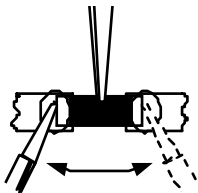
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

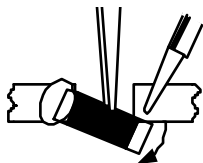
1. How to remove Chip parts

◆ Resistors, capacitors, etc

- (1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

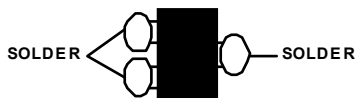


- (2) Shift with tweezers and remove the chip part.

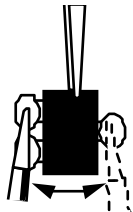


◆ Transistors, diodes, variable resistors, etc

- (1) Apply extra solder to each lead.



- (2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

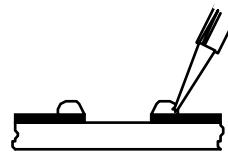


Note : After removing the part, remove remaining solder from the pattern.

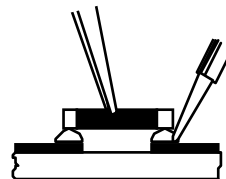
2. How to install Chip parts

◆ Resistors, capacitors, etc

- (1) Apply solder to the pattern as indicated in the figure.

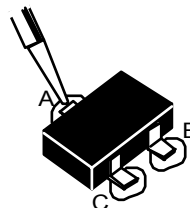


- (2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

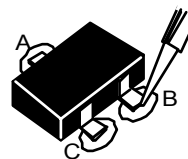


◆ Transistors, diodes, variable resistors, etc

- (1) Apply solder to the pattern as indicated in the figure.
- (2) Grasp the chip part with tweezers and place it on the solder.
- (3) First solder lead **A** as indicated in the figure.



- (4) Then solder leads **B** and **C**.



SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

1. There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.
2. The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
3. Make sure that connection is correctly made to AC power source.
4. Turn on the power of the TV and measuring instrument for warming up for at least 30 minutes before starting adjustment.
5. If the receive or input signal is not specified, use the most appropriate signal for adjustment.
6. Never touch parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.
7. Preparation for adjustment (presetting)
Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT

● USER MENU SETTING

Setting Item	Setting Position
ZOOM	PANORAMIC
PICTURE MODE (VSM)	NORMAL
TINT / CONTRAST / BRIGHT / SHARP / COLOUR	CENTER
SLEEP TIMER	OFF
TREBLE / BASS / BALANCE	CENTER
ECO	OFF

MEASURING INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator (Digital & Analog))
[PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

< MONITOR >

■ Checking item

- Adjustment of POWER VOLTAGE

< RECEIVER >

- Checking of AFT CW VCO

■ VSM presetting

- Setting of VSM PRESET

■ V/C circuit adjustment

- Adjustment of WHITE BALANCE (High Light)
- Adjustment of SUB BRIGHT
- Adjustment of CONTRAST
- Adjustment of SUB COLOUR I
- Adjustment of SUB COLOUR II
- Adjustment of SUB HUE I
- Adjustment of SUB HUE II
- Checking of MAIN COLOUR DECODER VCO
- Checking of SUB COLOUR DECODER VCO

■ DEFLECTION circuit adjustment

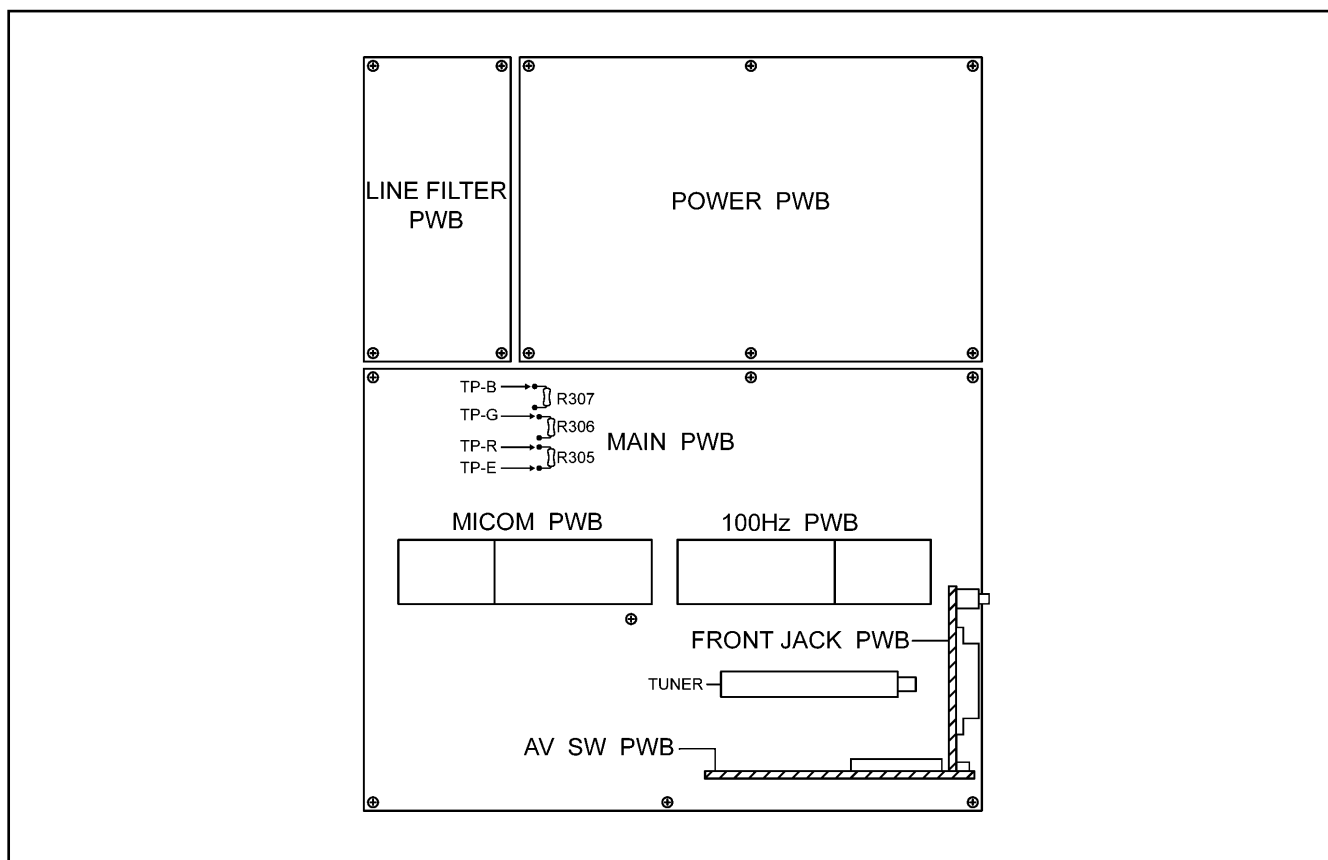
- Adjustment of V. POSITION
- Adjustment of V. SIZE
- Adjustment of H. POSITION
- Adjustment of H. SIZE

NOTE

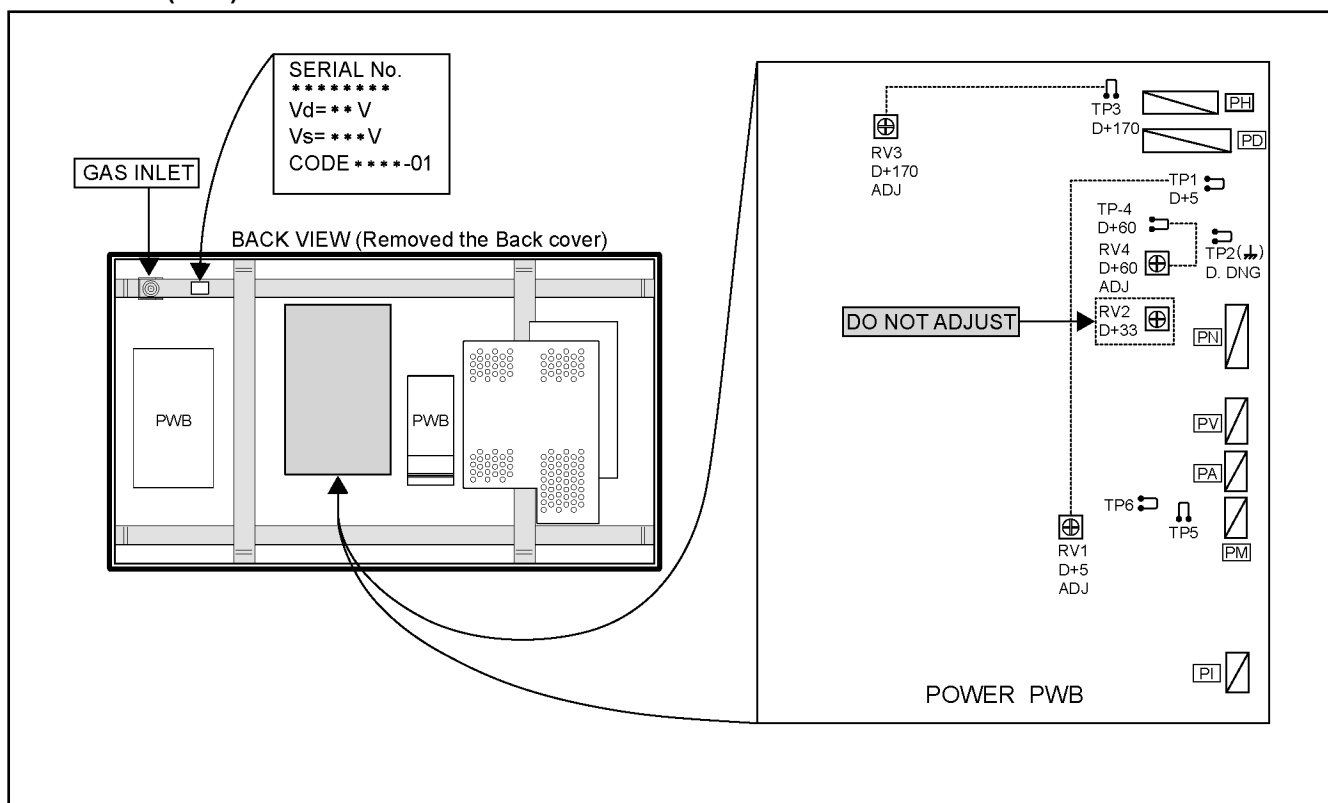
This model (AV42PD20ES) consists of a MONITOR and a RECEIVER. However, the MONITOR and RECEIVER cannot be activated separately. Trying the separate activation of the MONITOR or RECEIVER may cause a trouble. Always try to activate the MONITOR and RECEIVER as a unit during a service repair.

ADJUSTMENT PART LOCATIONS

■ RECEIVER



■ MONITOR (PDP)



BASIC OPERATION SERVICE MENU

1. TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. SERVICE MENU ITEMS

With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings (adjustments):

- (1) **1. IF** This mode adjusts the setting values of the IF circuit.
- (2) **2.V/C** This mode adjusts the setting values of the VIDEO / CHROMA circuit.
- (3) **3.AUDIO** This mode adjusts the setting values of the multiplicity SOUND circuit.
- (4) **4.DEF** This mode adjusts the setting values of the DEFLECTION circuit.
- (5) **5.VSM PRESET** This mode adjusts the initial setting values of COOL, NORMAL and WARM.
(VSM : Video Status Memory)

3. BASIC OPERATION OF SERVICE MENU

(1) How to enter SERVICE MENU

Press the **INFORMATION** key and the **MUTING** key of the REMOTE CONTROL UNIT (Fig. 2) simultaneously, and the SERVICE MENU screen of Fig. 1 will be displayed.

SERVICE MENU

SERVICE MENU

- | | |
|--------------------------|-------------|
| 1. IF | 2. V/C |
| 3. AUDIO | 4. DEF |
| 5. VSM PRESET | 6. STATUS |
| 7. PIP | 8. --- |
| 9. SHIPPING (OFF) | 0. BUS FREE |
| 1-0 : SELECT i : EXIT | |

Fig.1

(2) Selection of SUB MENU SCREEN

Press one of keys 1~5 (Fig. 2) of the REMOTE CONTROL UNIT and select the SUB MENU SCREEN (See Fig. 3), from the SERVICE MENU.

SERVICE MENU → SUB MENU

- | | |
|-------------------|---------------|
| 1. IF | |
| 2. V / C | |
| 3. AUDIO | Not to adjust |
| 4. DEF | |
| 5. VSM PRESET | |
| 6. STATUS | |
| 7. PIP | |
| 8. --- | Not to adjust |
| 9. SHIPPING (OFF) | |
| 0. BUSS FREE | |

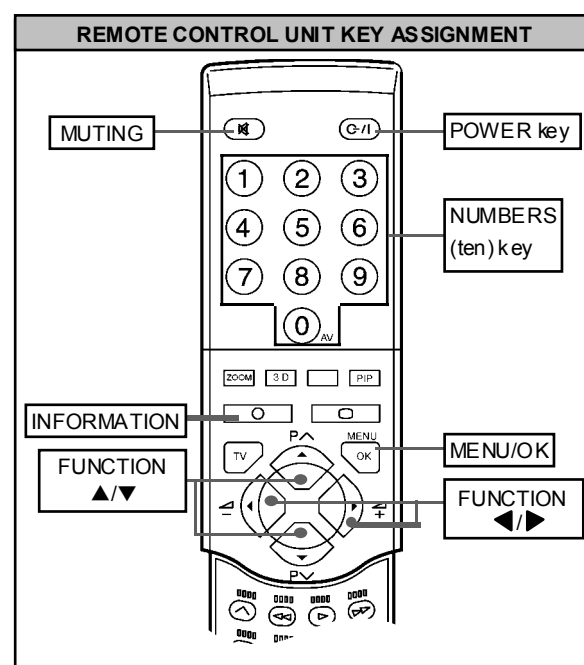


Fig.2

SERVICE MENU FLOW CHART

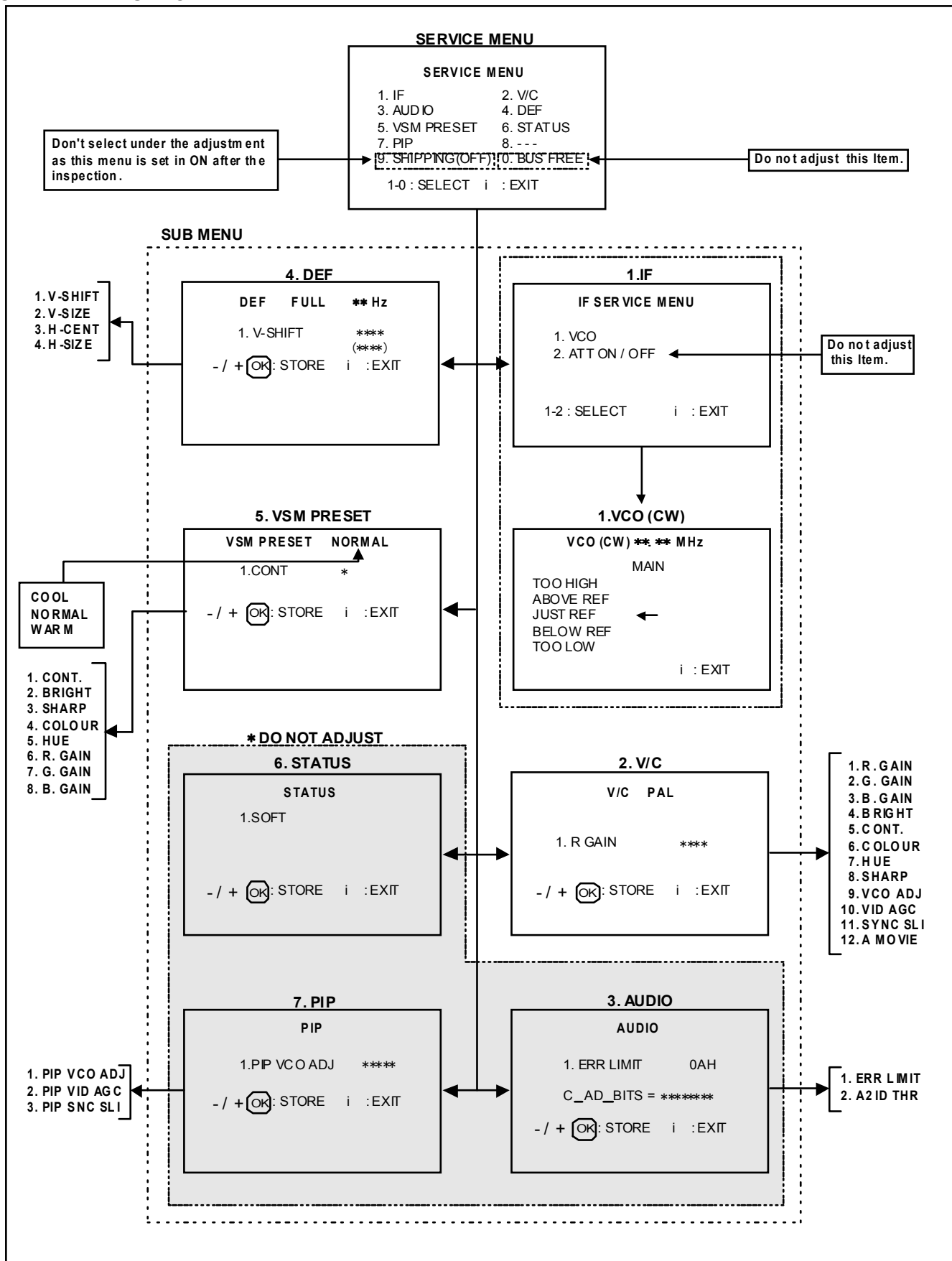


Fig.3

(3) Setting methods● Method of Setting **1.IF** as [VCO]

(The adjustment should not be done without signal.)

- ① 1 Key Select 1.IF.
- ② 1 Key Select 1. VCO (CW)
Check the arrow position between the "ABOVE REF. and BELOW REF.
- ③ INFORMATION Key Return to the SERVICE MENU screen.

● Method of setting **2.V/C, 4.DEF** and **5.VSM PRESET**.

- ① 2~5 Key Select one from **2. V/C, 4. DEF** and **5. VSM PRESET**.
- ② FUNCTION UP/DOWN Key Select setting items.
- ③ FUNCTION LEFT/RIGHT Key Set (adjust) the setting values of the setting items.
- ④ MENU (OK) Key Memorize the setting value.
(Before storing the setting values in memory, do not press the CH, TV, POWER ON / OFF key
- if you do, the values will not be stored in memory.)
- ⑤ INFORMATION Key Return to the **SERVICE MENU** screen.

● Do not adjust **3.AUDIO, 6. STATUS, 7. PIP, 8. --, 9. SHIPPING (OFF)** and **0. BUS FREE** function.

(4) Release of SERVICE MENU

- 1) After completing the adjustment, return to the SERVICE MENU, then again press the INFORMATION key to return to the normal screen.

INITIAL SETTING VALUE OF SERVICE MENU

1. Adjustment of the SERVICE MENU is made on the basis of the initial setting values ; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.
2. Do not change the initial setting values of the setting (Adjustment) items not listed in “ADJUSTMENT”.

1.IF

SETTING ITEM	Initial setting value
1.VCO	Proper value by adjustment. See “adjustment of VCO” contents
2.ATT ON/OFF	Do not adjust this item.

2.V/C (VIDEO / CHROMA) (☐ is adjustment not to required)

Colour system Setting item	Initial setting value		
	PAL	SECAM	NT SC
1. R. GAIN	-15	←	←
2. G. GAIN	-15	←	←
3. B. GAIN	-15	←	←
4. BRIGHT	20	←	←
5. CONTRAST	0	←	←
6. COLOUR	-10	←	←
7. HUE	—	—	011
8. SHARP	0	←	←
9. VCO ADJUSTMENT	Automatically optimized after adjustment		
10. VIDEO AGC	00	←	←
11. SYNC SLICE	+07	←	←
12. A. MOVIE	01	←	←

3.AUDIO (Do not adjust)

Setting item	Variable range	Initial setting value (Fixed value)
1. ERR LIMIT	00H~FFH	10
2. A2 ID THR	00H~FFH	19

4.DEF (☐ is adjustment not to required)

Setting item	VALUE
	FULL
	50Hz p
1. V-SHIFT	-03
2. V-SIZE	00
3. H-CENT	-06
4. H-SIZE	00

5.VSM PRESET

VSM preset mode Setting item	COOL	NORMAL	WARM
1. CONT .	+12	+12	00
2. BRIGHT	00	00	00
3. SHARP	-12	-12	-12
4. COLOUR	00	00	-01
5. HUE	00	00	00
6. R. GAIN	00	00	00
7. G. GAIN	00	00	00
8. B. GAIN	00	00	00

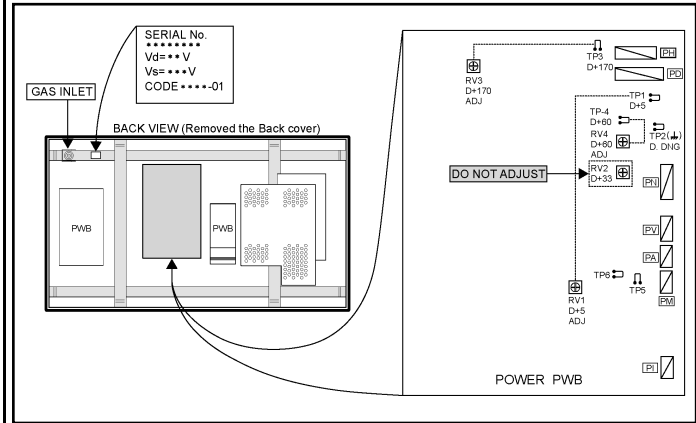
7.PIP (☐ is adjustment not to required)

Setting item	Initial setting value		
	PAL	SECAM	NTSC
1. PIP VCO ADJ	—	—	—
2. PIP VID AGC	00	←	←
3. PIP SNC SLI	+07	←	←

ADJUSTMENT

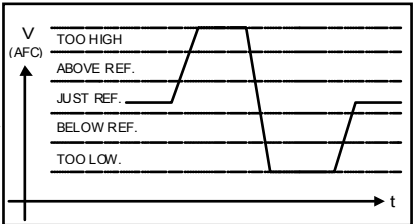
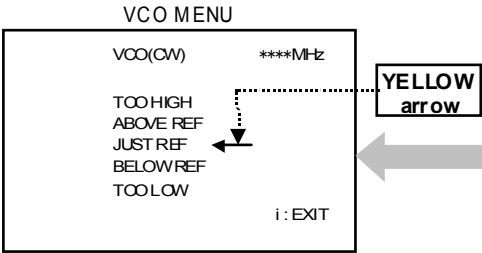
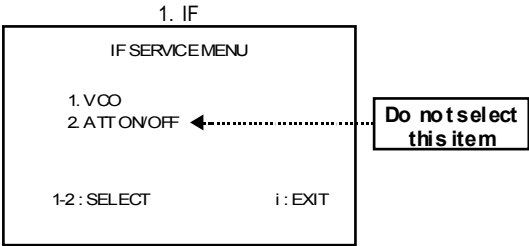
MONITOR

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of POWER VOLTAGE	DC voltmeter Signal generator	TP-1 (+5V) TP-2 (↗) TP-3 (+170V) TP-4 (+60V)	VR1 (+5) VR3 (+170V) VR4 (+60V)	<p>* Adjustment of Vs(+170V) voltage.</p> <ol style="list-style-type: none">1. Input the colour bar signal to RGB input terminal.2. Connect the digital voltmeter across TP3 and TP2 (↗).3. Adjust the VR3 to set the voltage within ±1V of the voltage (Vs as shown on the SERIAL LABEL) designed for the PDP module. <p>* Adjustment of Vd(+60V) voltage.</p> <ol style="list-style-type: none">1. Input the colour bar signal to RGB input terminal.2. Connect the digital voltmeter across TP4 and TP2 (↗).3. Adjust the VR4 to set the voltage within ±1V of the voltage (Vs as shown on the SERIAL LABEL) designed for the PDP module. <p>* Adjustment of +5V voltage.</p> <ol style="list-style-type: none">1. Input the colour bar signal to RGB input terminal.2. Connect the digital voltmeter across TP1 and TP2 (↗).3. Confirm that the voltage of the TP1 and TP2 (↗) have become 5.1V±0.1V. If not, adjust the VR1 at the +5V ADJ of the POWER PWB so that the voltage become 5.1V±0.1V.



RECEIVER

Checking of AFT CW VCO	Remote control unit	1.VCO	<ul style="list-style-type: none">Under normal conditions, no adjustment is required confirmation adjustment.1. Select 1.IF from the SERVICE MENU.2. Then select 1.VCO from the 1.IF SERVICE MENU (Fig.1).3. Receive any broadcast (55.75MHz or 216.00MHz is best).4. In the VCO adjustment screen, the yellow allows point (Fig.2) to the characters. Check the yellow allow position where pointed to the character from "ABOVE REF" to "BELOW REF" (Fig.2 & Fig.3). <p>* The arrow position menu AFC voltage level.</p>
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VSM PRESET SETTING

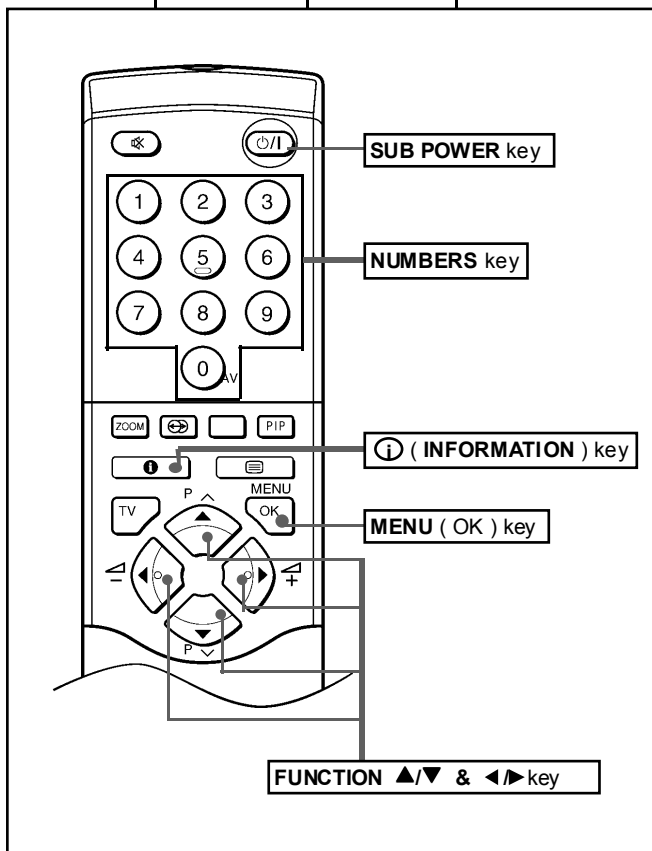
Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	Remote control unit		1. CONT. 2. BRIGHT 3. SHARP 4. COLOUR 5. HUE 6. R. GAIN 7. G. GAIN 8. B. GAIN	1. Press the MENU (OK) key and select COOL mode with the remote control unit. 2. Select 5.VSM PRESET from the SERVICE MENU. 3. Adjust the FUNCTION ▲/▼ and ◀/▶ key to bring the set values of 1.CONT ~ 8.B GAIN to the initial setting values as shown in the before table. 4. Press the MENU key and memorize the set value. 5. Respectively select the VSM PRESET mode for NORMAL and WARM, and make similar adjustment as in 3 above. 6. Press the MENU (OK) key and memorize the set value. ★ Refer to OPERATING INSTRUCTIONS for the PICTURE MODE.

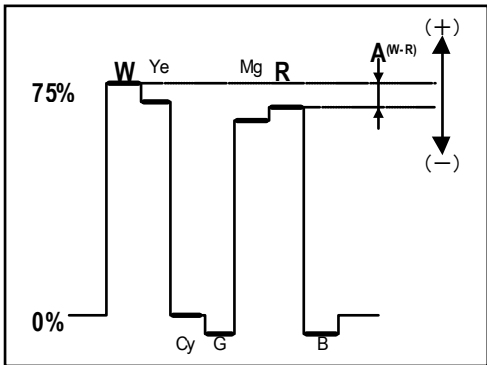
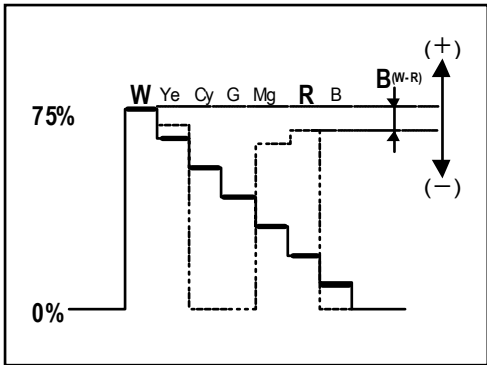
V/C (VIDEO/CHROMA) CIRCUIT ADJUSTMENT

- The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

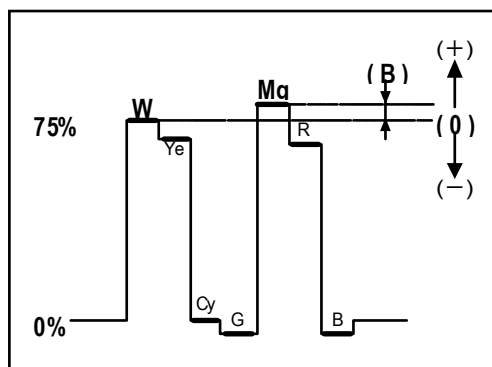
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (High-Light)	Signal generator Remote control unit		1. R. GAIN 2. G. GAIN	● Set the PICTURE MODE to NORMAL. 1. Receive a black and white signal (colour off). 2. Select 2. V/C from the SERVICE MENU. 3. Modify 1.R.GAIN and 2.G.GAIN value to set the white balance (high light). 4. Press the MENU (OK) key and memorize the set value. 5. Change the contrast and brightness up and down with the remote control unit from Low-light to High-light, and check that the tracking of the white balance is good.
Adjustment of SUB BRIGHT	Remote control unit		4.BRIGHT	1. Receive any broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 4.BRIGHT with the FUNCTION ▲/▼ key. 4. Set the initial setting value with the FUNCTION ◀/▶ key. 5. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness. 6. Press the MENU (OK) key and memorize the set value.
Adjustment of SUB CONTRAST	Remote control unit		5.CONTRAST	1. Receive a PAL colour bar signal. 2. Switch the sub power SW to OFF & ON. 3. Select 2.V/C from the SERVICE MENU. 4. Select 5.CONTRAST with the FUNCTION ▲/▼ key. 5. Set the initial setting value with the FUNCTION ◀/▶ key. 6. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast. 7. Press the MENU (OK) key and memorize the set value.


Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR I	Remote control unit		6.COLOUR	<p>[Method of adjustment without measuring instrument]</p> <p>< PAL COLOUR ></p> <ol style="list-style-type: none"> 1. Receive PAL broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 6.COLOUR with the FUNCTION ▲/▼ key. 4. Set the initial setting value for PAL COLOUR with the FUNCTION ◀/▶ key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 6. Press the MENU (OK) key and memorize the set value. <p>< SECAM COLOUR ></p> <ol style="list-style-type: none"> 1. Receive a SECAM broadcast. 2. Make fine adjustment of SECAM COLOUR in the same manner as for above. <p>< NTSC 3.58 COLOUR ></p> <ol style="list-style-type: none"> 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal from the EXT terminal. 2. Make similar fine adjustment of NTSC 3.58 COLOUR in the same manner as for above. <p>< NTSC 4.43 COLOUR ></p> <ol style="list-style-type: none"> 1. Input a NTSC 4.43MHz COMPOSITE VIDEO signal from the EXT terminal. 2. Make similar fine adjustment of 4.43 COLOUR in the same manner as for above.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR II	Signal generator	TP-R TP-E(↗)	6.COLOUR	[Method of adjustment using measuring instrument] < PAL COLOUR > 1. Receive a PAL full field colour bar signal (75% white). 2. Select 2.V/C from the SERVICE MENU. 3. Select 6.COLOUR with the FUNCTION ▲/▼ key. 4. Set the initial setting value of PAL COLOUR with the FUNCTION ◀/▶ key. 5. Connect the oscilloscope between TP-R and TP-E 6. Adjust PAL COLOUR and bring the value of (A) in the to illustration (Fig.1) to -140mV(W-R). 7. Press the MENU (OK) key and memorize the setting value.
	Oscilloscope	[CRT SOCKET PWB]		
	Remote control unit			
				 <p>Fig. 1</p>
				<p>< SECAM COLOUR ></p> <p>1. Receive a SECAM full field colour bar signal (75% white). 2. Set the initial setting value of SECAM COLOUR with the FUNCTION ◀/▶ key. 3. Adjust SECAM COLOUR and bring the value of (A) in the illustration (Fig.2) to -140mV(W-R). 4. Press the MENU (OK) key and memorize the setting value.</p>
				 <p>Fig. 2</p>
				<p>< NTSC 3.58 COLOUR ></p> <p>1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Set the initial setting value of NTSC 3.58 COLOUR with the FUNCTION ◀/▶ key. 3. Adjust NTSC 3.58 COLOUR and bring the value of (B) of the illustration (Fig.1) to -140mV(W-B). 4. Press the MENU (OK) key and memorize the setting value.</p>
				<p>< NTSC 4.43 COLOUR ></p> <p>1. When NTSC3.58 adjustment has done, then NTSC4.43 adjustment will be automatically set at the respective values.</p>

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB HUE I	Remote control unit		7.HUE	<p>[Method of adjustment without measuring instrument]</p> <p>< NT SC 3.58 HUE ></p> <ol style="list-style-type: none"> 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 3. Select 7.HUE with the FUNCTION ▲/▼ key. 4. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION ◀/▶ key. 5. If you cannot get the best HUE with the initial setting value, make fine adjustment until you get the best HUE. 6. Press the MENU (OK) key and memorize the set value. <p>< NT SC 4.43 HUE ></p> <ol style="list-style-type: none"> 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of SUB HUE II	Signal generator Oscilloscope Remote control unit	TP-R TP-E(↗) [CRT SOCKET PWB]	7.HUE	<p>[Method of adjustment using measuring instrument]</p> <p>< NT SC 3.58 HUE ></p> <ol style="list-style-type: none"> 1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. 2. Select 2.V/C from the SERVICE MENU. 2. Select 7.HUE with the FUNCTION ▲/▼ key. 4. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION ◀/▶ key. 5. Connect the oscilloscope between TP-R and TP-E 6. Adjust NTSC 3.58 HUE to bring the value of (B) in the illustration to 30mV(W-Mg). 7. Press the MENU (OK) key and memorize the setting value <p>< NT SC 4.43 HUE ></p> <ol style="list-style-type: none"> 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

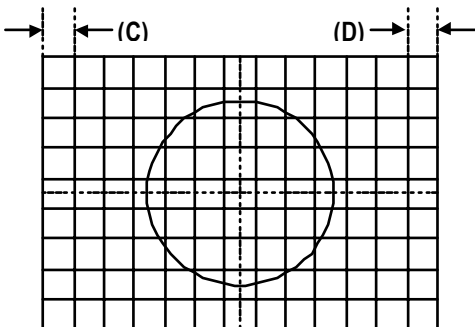
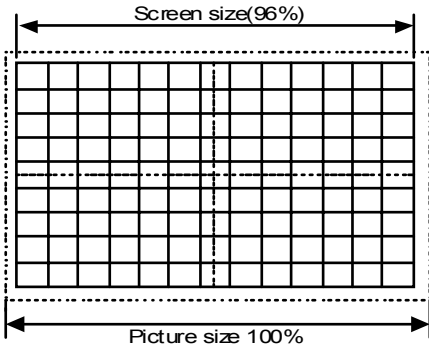


Item	Measuring instrument	Test point	Adjustment part	Description
Checking of MAIN COLOUR DECODER VCO	Signal generator Remote control unit		9. VCO	1. Input a PAL half colour bar signal (75% white) from the EXT terminal. 2. Select 2. V/C from the SERVICE MENU. 1. Select 9. VCO adjustment with the FUNCTION ▲/▼ key. 4. Press the MENU (OK) key then automatically optimized.
Checking of PIP COLOUR DECODER VCO	Signal generator Remote control unit		7. PIP	1. Select 7. PIP from the SERVICE MENU. 2. Receiver a PAL half colour bar (75% white) signal for the SUB-PICTURE (Right-Side picture) 3. Select 1. PIP VOC ADJ. with the FUNCTION ▲/▼ key. 4. Press the MENU (OK) key then automatically optimized.
				

DEFLECTION CIRCUIT ADJUSTMENT

- When the FULL mode has been established, the setting of other modes will be done automatically. However, if the picture quality has not been optimized, adjust each mode again, respectively.
- There are 5 aspect modes (①FULL, ②PANORAMIC, ③REGULAR, ④16:9 ZOOM, ⑤14:9 ZOOM) of the adjustment depending upon the kind of signals.
- The adjustment using the remote control unit is made on the basis of the initial setting values.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V. POSITION	Signal generator Remote control unit		1.V- SHIFT	<ul style="list-style-type: none"> ● Set the ASPECT MODE to FULL. 1. Receive a circle pattern signal. 2. Select 4.DEF from the SERVICE MENU. 3. Select 1.V-SHIFT with the FUNCTION ▲/▼ key. 4. Adjust V-SHIFT to make $A = B$. 5. Check the adjustment condition in other aspect mode. If it is a wrong condition, re-adjust in "FULL" mode with 1. V-SHIFT. 6. Press the MENU (OK) key and memorize the set value.
Adjustment of V. SIZE	Signal generator Remote control unit		2.V-SIZE	<ul style="list-style-type: none"> 7. Receive a cross hatch signal. 8. Select 2.V-SIZE and set the initial setting value to zero(0). 9. Adjust the V-SIZE to the vertical screen size of the picture becomes the value given figure. 10. Press the MENU (OK) key and memorize the set value.

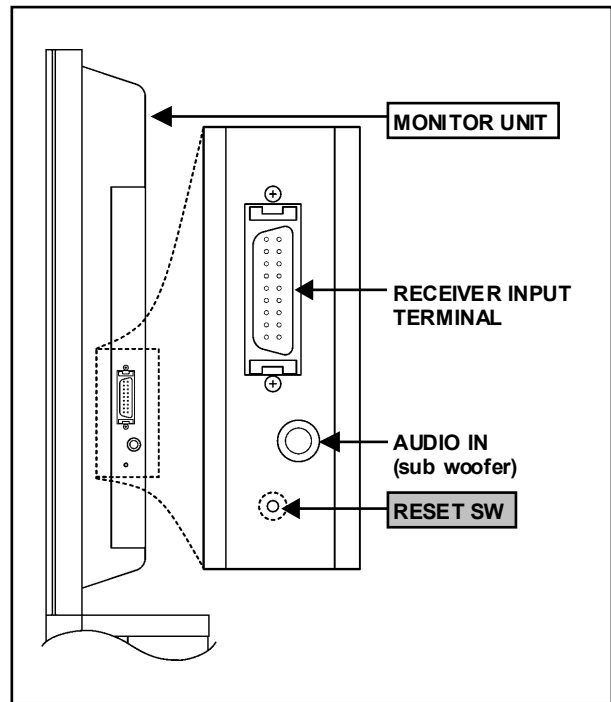
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of H. POSITION	Signal generator Remote control unit		3.H-CENT.	<p>11. Receive a crosshatch with circle pattern signal.</p> <p>12. Select 3.H-CENT and set the initial setting value.</p> <p>13. Adjust H-CENT to make $C=D$.</p> <p>14. Press the MENU (OK) key and memorize the set value.</p>
				
Adjustment of H. SIZE	Signal generator Remote control unit		4.H-SIZE	<p>15. Receive a crosshatch pattern signal.</p> <p>16. Select 4.H-SIZE and set the initial setting value to zero(0).</p> <p>17. Adjust the H-SIZE and make sure that the horizontal screen size of the picture is in the table below.</p> <p>18. Press the MENU (OK) key and memorize the set value.</p> <p>19. Input the NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the horizontal screen size of the picture becomes the value given figure.</p> <p>20. Press the MENU (OK) key and memorize the set value.</p>
				

TROUBLESHOOTING

MONITOR UNIT DOES NOT WORK

(When the LED blinks with RED and GREEN alternatively)

- 1) Press the RESET SW while the power is turned off.
- 2) Then, wait for two seconds after turning the power on.
- 3) Turn the power off after two seconds.
- 4) Release the RESET PW.
- 5) The main unit of PDP will be activated when the power is tuned on.



PARTS LIST

CAUTION

- The parts identified by the \triangle symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines — in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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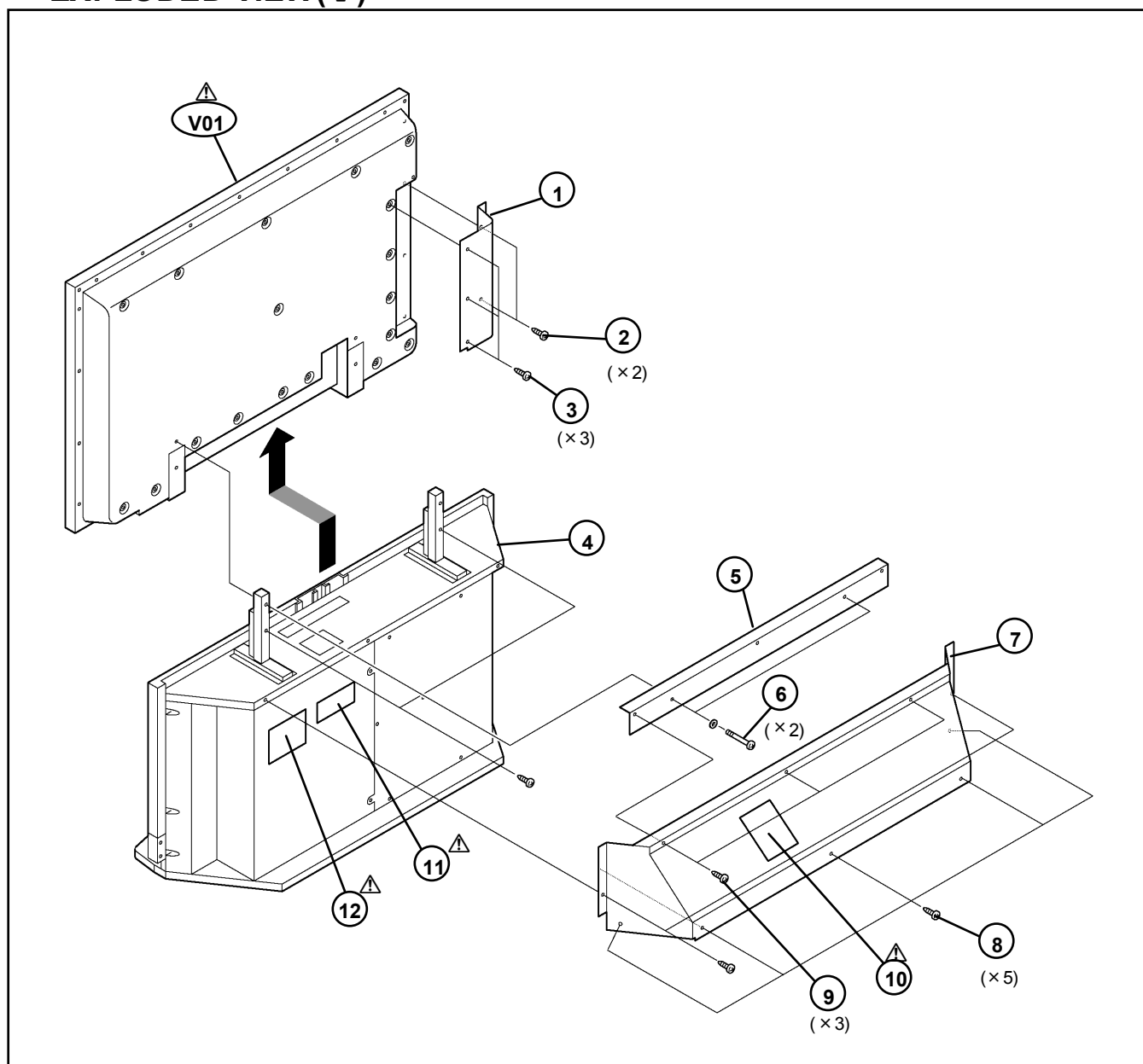
USING PW BOARD & REMOTE CONTROL UNIT

Model PWB ASS'Y	AV42PD20ES
MAIN PWB	SMF-1101A-U2
POWER PWB	SMF-9101A-U2
LINE FILTER PWB	SMF-9102A-U2
FRONT CONTROL PWB	SMF-8301A-U2
FRONT SW PWB	SMF-8302A-U2
SPEAKER TERMINAL PWB	SMF-8303A-U2
MICOM PWB	SMF0M301A-U2
AV SW PWB	SMF0S301A-U2
100Hz PWB	SMF0Z301A-U2
FRONT JACK PWB	SMF0J301A-U2
REMOTE CONTROL UNIT	RM-C59-1C

EXPLODED VIEW PARTS LIST(I)

△ Ref.No.	Part No.	Part Name	Description
△ V01	QLE0016-001	P.D.P.	
1	LC11294-001A-U	BACK COVER	
2	QYSDSF4016M	TAP SCREW	(×2)
3	QYSDSP4016M	SCREW	(×3)
4	LC11299-001B-U	WOOD CABI	
5	LC20805-001C	BACK STAY	
6	QYS SSP4040N	SCREW	(×2)
7	LC11293-001-U	BACK COVER	
8	QYSBSAG4018M	TAPPING SCREW	(×5)
9	QYSBSBG4016M	TAPPING SCREW	(×3)
△ 10	LC30789-002B-U	WARNING LABEL	
△ 11	LC21119-001A-U	RATING LABEL	
△ 12	LC21024-001A-U	RATING LABEL	

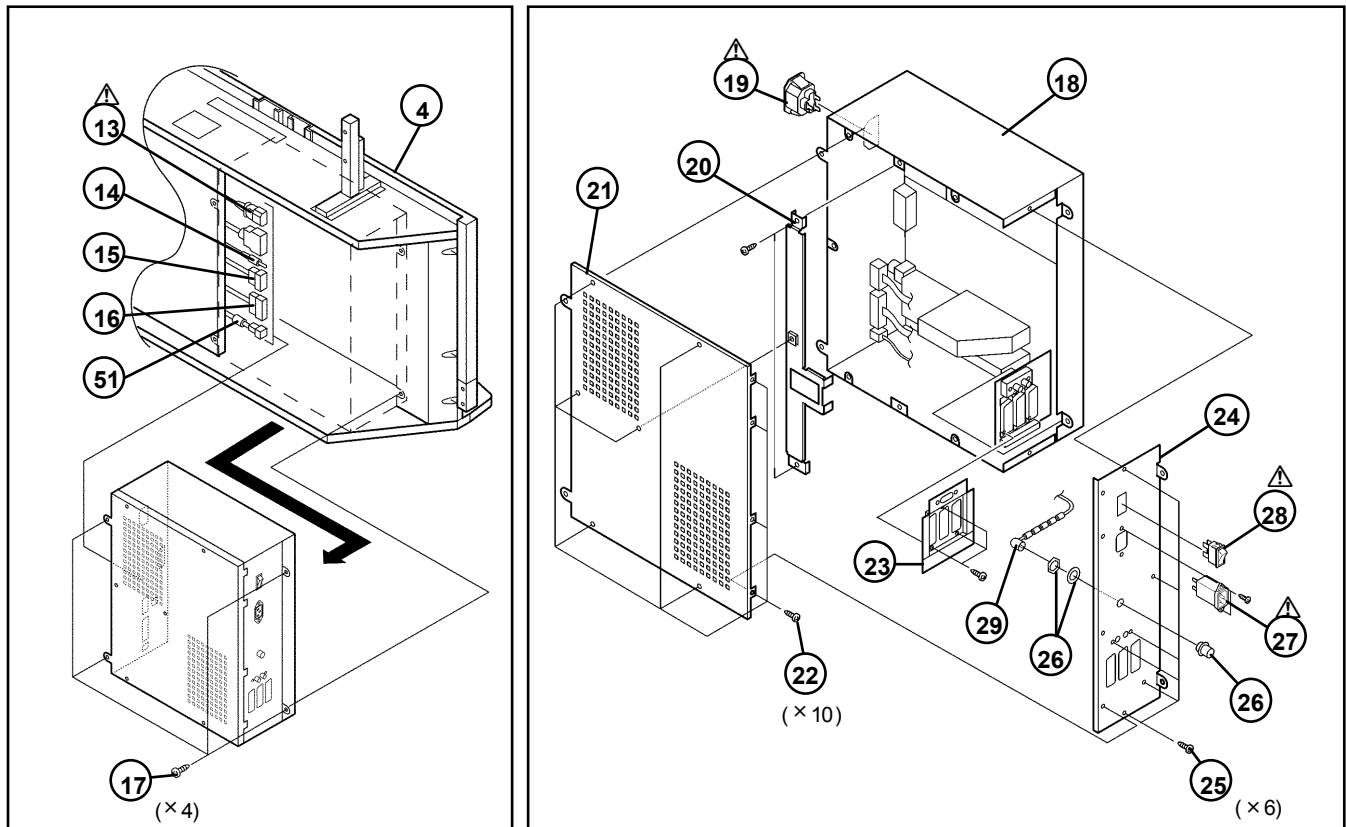
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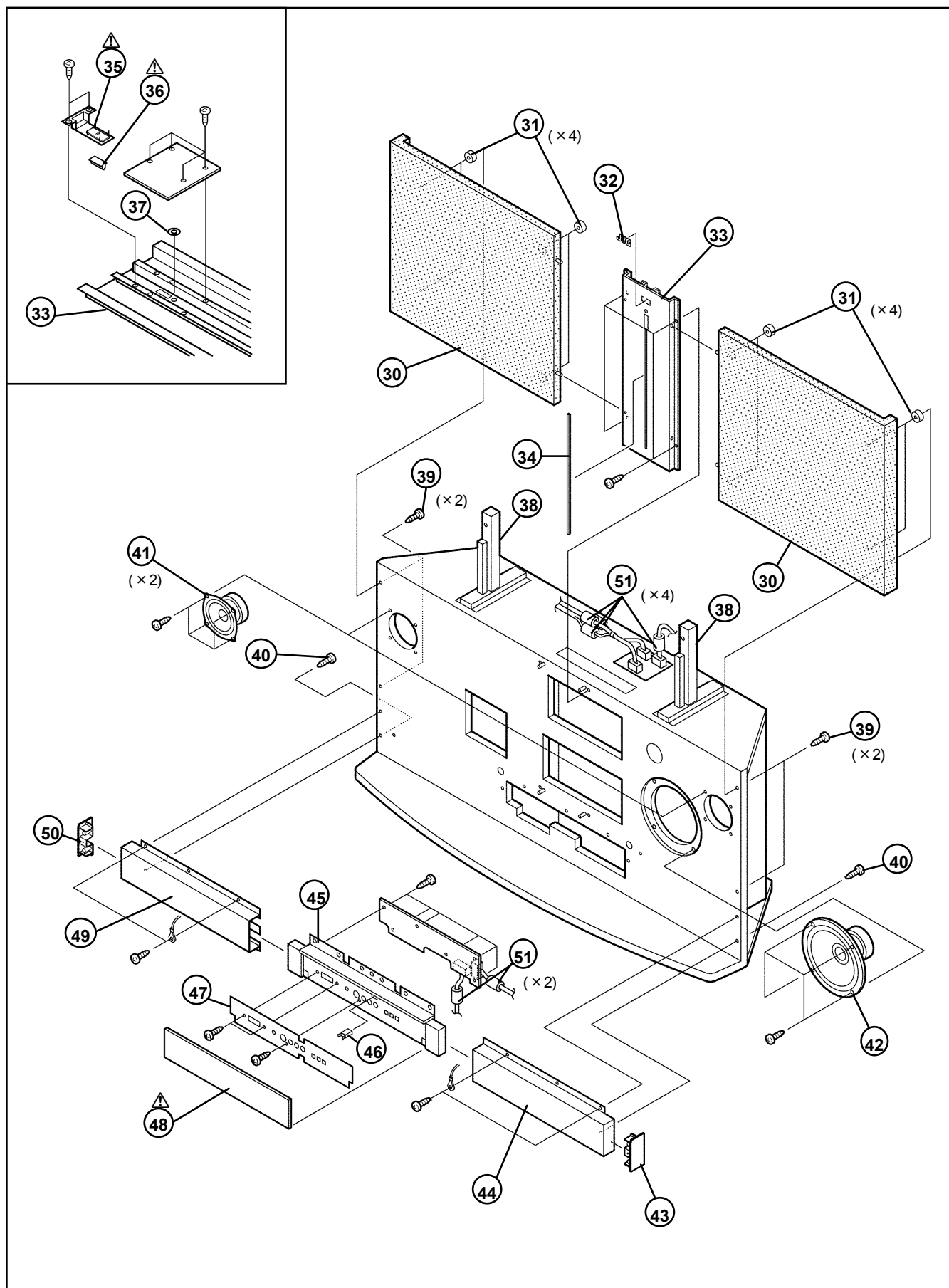


EXPLODED VIEW PARTS LIST(Ⅱ)

△ Ref.No.	Part No.	Part Name	Description
△ 13	QMPL200-055-K	POWER CORD	
14	QAM0378-001	A/V CABLE	
15	WJJ0334-001A	E-SI C WIRE C-C	
16	WJJ0335-001A	E-SI C WIRE C-C	
17	QYSBSAG4018M	TAPPING SCREW	(×4)
18	LC11295-001A-U	CHASSIS CASE	
△ 19	QNC0093-001	AC OUTLET	
20	LC21023-001A-U	CHASSIS BEAM	
21	LC11296-001A-U	CHASSIS CASE TOP	
22	QYSBSB3008M	TAPPING SCREW	(×10)
24	LC11297-001A-U	AV PLATE	
25	QYSBSB3008M	TAPPING SCREW	(×6)
26	CE42112-002	PAL J CONNECTOR	
△ 27	QNC0085-002	AC INLET	(with WASHER & NUT)
△ 28	QSW0699-001	SEESAW SWITCH	
29	CHGY0017-0B-UK	E-COAXIAL ASSY	
30	LC11067-001C	SPEAKER NET	(×2)
31	LC40312-004A	RUBBER WASHER	(×8)
32	LC41037-002A	JVC MARK	
33	LC20787-002A	CENTER PANEL	
34	LC31494-002A	ACCESSORY LENS	
△ 35	LC31493-001B	POWER KNOB	
△ 36	LC41042-001A	LENS	
37	LC41097-001A	LED SHADE	
38	LC20786-001A	STAND	(×2)
39	QYSPSAG4025M	SCREW	(×4)
40	QYSBSAG4018M	TAPPING SCREW	(×2)
41	QAS0107-001	SPEAKER	(×2)
42	QAS0108-001	SPEAKER	
43	LC31497-001B	SIDE CAP	
44	LC31495-001A	UNDER PANEL(R)	
45	LC11069-002A	CONTROL BASE	
46	CM48229-00A-C	DOOR LATCH	
47	LC31498-002B	CONTROL SHEET	
△ 48	LC11068-002A	DOOR	
49	LC31495-002A	UNDER PANEL(L)	
50	LC31497-002B	CAP	
51	QQR0491-002	CORE FILTER	(×7)

EXPLODED VIEW(Ⅱ)





PRINTED WIRING BOARD PARTS LIST

■ MAIN P.W. BOARD ASS'Y (SMF-1101A-U2)

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R1002-03	NRSA63J-473X	MG R	47kΩ 1/16W J
R1004-05	NRSA63J-101X	MG R	100Ω 1/16W J
R1008-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1101-02	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1103	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R1104	NRSA63J-102X	MG R	1kΩ 1/16W J
R1105	NRSA63J-561X	MG R	560Ω 1/16W J
R1106	NRSA63J-331X	MG R	330Ω 1/16W J
R1107	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1108	NRSA63J-102X	MG R	1kΩ 1/16W J
R1109-11	NRSA63J-101X	MG R	100Ω 1/16W J
R1151	NRSA63J-101X	MG R	100Ω 1/16W J
R1153	NRSA63J-101X	MG R	100Ω 1/16W J
R1155	NRSA63J-101X	MG R	100Ω 1/16W J
R1157	NRSA63J-101X	MG R	100Ω 1/16W J
R1301-02	NRSA63J-101X	MG R	100Ω 1/16W J
R1303	NRSA63J-273X	MG R	27kΩ 1/16W J
R1304	NRSA63J-103X	MG R	10kΩ 1/16W J
R1305	QRK126J-101X	C R	100Ω 1/2W J
R1306	QRK126J-101X	C R	100Ω 1/2W J
R1307	QRK126J-101X	C R	100Ω 1/2W J
R1308-10	NRSA63J-750X	MG R	75Ω 1/16W J
R1311	NRSA63J-153X	MG R	15kΩ 1/16W J
R1312	NRSA63J-563X	MG R	56kΩ 1/16W J
R1314	NRSA63J-221X	MG R	220Ω 1/16W J
R1315-17	NRSA63J-101X	MG R	100Ω 1/16W J
R1318	NRSA63J-103X	MG R	10kΩ 1/16W J
R1321-22	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1337-39	NRSA63J-101X	MG R	100Ω 1/16W J
R1351	NRSA63J-152X	MG R	1.5kΩ 1/16W J
R1352	NRSA63J-182X	MG R	1.8kΩ 1/16W J
R1353	NRSA63J-562X	MG R	5.6kΩ 1/16W J
R1354	NRSA63J-152X	MG R	1.5kΩ 1/16W J
R1355	NRSA63J-822X	MG R	8.2kΩ 1/16W J
R1356	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R1357-59	NRSA63J-473X	MG R	47kΩ 1/16W J
R1360-62	NRSA63J-273X	MG R	27kΩ 1/16W J
R1363-65	NRSA63J-561X	MG R	560Ω 1/16W J
R1366-68	NRSA63J-102X	MG R	1kΩ 1/16W J
R1369-71	NRSA63J-122X	MG R	1.2kΩ 1/16W J
R1372-74	NRSA63J-101X	MG R	100Ω 1/16W J
R1375	NRSA63J-822X	MG R	8.2kΩ 1/16W J
R1391-93	NRSA63J-152X	MG R	1.5kΩ 1/16W J
R1394-97	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R1398	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R1401	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R1402	NRSA63J-103X	MG R	10kΩ 1/16W J
R1403	NRSA63J-331X	MG R	330Ω 1/16W J
R1404	NRSA63J-221X	MG R	220Ω 1/16W J
R1405	NRSA63J-151X	MG R	150Ω 1/16W J
R1406	NRSA63J-392X	MG R	3.9kΩ 1/16W J
R1407	NRSA63J-221X	MG R	220Ω 1/16W J
R1408	NRSA63J-101X	MG R	100Ω 1/16W J
R1409	NRSA63J-103X	MG R	10kΩ 1/16W J
R1410	NRSA63J-152X	MG R	1.5kΩ 1/16W J
R1491	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R1492	NRSA63J-103X	MG R	10kΩ 1/16W J
R1501	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1504	NRSA63J-102X	MG R	1kΩ 1/16W J
R1511	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R1512	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1513	NRSA63J-103X	MG R	10kΩ 1/16W J
R1515	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1516	NRSA63J-103X	MG R	10kΩ 1/16W J
R1521	NRSA63J-182X	MG R	1.8kΩ 1/16W J
R1522	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R1523	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1524	NRSA63J-152X	MG R	1.5kΩ 1/16W J

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R1525	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R1526	NRSA63J-221X	MG R	220Ω 1/16W J
R1527	NRSA63J-101X	MG R	100Ω 1/16W J
R1528	NRSA63J-102X	MG R	1kΩ 1/16W J
R1591	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1592	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R1593	NRSA63J-182X	MG R	1.8kΩ 1/16W J
R1595	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R1596	NRSA63J-104X	MG R	100kΩ 1/16W J
R1604	NRSA63J-104X	MG R	100kΩ 1/16W J
R1605	NRSA63J-473X	MG R	47kΩ 1/16W J
R1606	NRSA63J-273X	MG R	27kΩ 1/16W J
R1607	NRSA63J-104X	MG R	100kΩ 1/16W J
R1609	QRK126J-103X	C R	10kΩ 1/2W J
R1610-12	NRSA63J-223X	MG R	22kΩ 1/16W J
R1613	NRSA63J-561X	MG R	560Ω 1/16W J
R1614	NRSA63J-153X	MG R	15kΩ 1/16W J
R1615	NRSA63J-104X	MG R	100kΩ 1/16W J
R1616-17	NRSA63J-333X	MG R	33kΩ 1/16W J
R1618-19	NRSA63J-103X	MG R	10kΩ 1/16W J
R1620-21	NRSA63J-334X	MG R	330kΩ 1/16W J
R1623	NRSA63J-223X	MG R	22kΩ 1/16W J
R1630	QRK126J-2R2X	C R	2.2Ω 1/2W J
R1632	NRSA63J-104X	MG R	100kΩ 1/16W J
R1671	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1673	NRSA63J-225X	MG R	2.2kΩ 1/16W J
R1674	NRSA63J-223X	MG R	22kΩ 1/16W J
R1675	NRSA63J-272X	MG R	2.7kΩ 1/16W J
R1677	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1678	NRSA63J-153X	MG R	15kΩ 1/16W J
R1680-81	NRSA63J-101X	MG R	100Ω 1/16W J
R1701-02	NRSA63J-103X	MG R	10kΩ 1/16W J
R1703-04	NRSA63J-102X	MG R	1kΩ 1/16W J
R1705-08	NRSA63J-103X	MG R	10kΩ 1/16W J
R1711-12	NRSA63J-101X	MG R	100Ω 1/16W J
R1715	NRSA63J-102X	MG R	1kΩ 1/16W J
R1716-17	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R1721-23	NRSA63J-102X	MG R	1kΩ 1/16W J
R1751	NRSA63J-561X	MG R	560Ω 1/16W J
R1752	NRSA63J-102X	MG R	1kΩ 1/16W J
R1772-76	NRSA63J-221X	MG R	220Ω 1/16W J
R1951	QRK126J-220X	C R	22Ω 1/2W J
CAPACITOR			
C1001	NCB31HK-222X	C CAP.	2200pF 50V K
C1002	QETN1HM-106Z	E CAP.	10μF 50V M
C1004	NCB31CK-104X	C CAP.	0.1μF 16V K
C1005	QETN1CM-108Z	E CAP.	1000μF 16V M
C1006	NCB31HK-103X	C CAP.	0.01μF 50V K
C1007	QETN1HM-106Z	E CAP.	10μF 50V M
C1009	NCB31CK-104X	C CAP.	0.1μF 16V K
C1010	QETN1HM-106Z	E CAP.	10μF 50V M
C1101	NCB31CK-104X	C CAP.	0.1μF 16V K
C1102	QETN1HM-106Z	E CAP.	10μF 50V M
C1103	NCB31CK-104X	C CAP.	0.1μF 16V K
C1104	QETN1CM-107Z	E CAP.	1000μF 16V M
C1105	QETN1HM-106Z	E CAP.	10μF 50V M
C1106-07	NCB31CK-104X	C CAP.	0.1μF 16V K
C1111	NCB31HK-103X	C CAP.	0.01μF 50V K
C1116	NCB31HK-472X	C CAP.	4700pF 50V K
C1117-18	NCB31HK-103X	C CAP.	0.01μF 50V K
C1119-20	NDC31HJ-2R0X	C CAP.	2.0pF 50V J
C1121	NCB31HK-103X	C CAP.	0.01μF 50V K
C1122-23	NDC31HJ-102X	C CAP.	1000pF 50V J
C1124-25	QETN1HM-106Z	E CAP.	10μF 50V M
C1126	NCB31CK-104X	C CAP.	0.1μF 16V K
C1127	QETN1HM-106Z	E CAP.	10μF 50V M

△ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C1128	NCB31CK-104X	C CAP.	0.1μF 16V K
C1129	NCF31AZ-105X	C CAP.	1μF 10V Z
C1130	QETN1HM-106Z	E CAP.	10μF 50V M
C1151-54	NCF31AZ-105X	C CAP.	1μF 10V Z
C1155-56	NDC31HJ-102X	C CAP.	1000pF 50V J
C1301	QETN1CM-107Z	E CAP.	100μF 16V M
C1302-03	NCB31CK-104X	C CAP.	0.1μF 16V K
C1305-09	NCB31CK-104X	C CAP.	0.1μF 16V K
C1310	QETN1AM-228Z	E CAP.	2200μF 10V M
C1311	NCB31CK-683X	CHIP CAP.	0.068μF 16V K
C1312	NDC31HJ-271X	CER.CAP.	270pF 50V J
C1313-15	NCF31HK-223X	C CAP.	0.022μF 50V K
C1316-18	NCF31HK-103X	C CAP.	0.01μF 50V K
C1320	QETN1JM-228Z	E CAP.	2200μF 6.3V M
C1321-23	NCF31HK-223X	C CAP.	0.022μF 50V K
C1331-33	QETN1CM-477Z	E CAP.	470μF 16V M
C1337	QETN1EM-476Z	E CAP.	47μF 25V M
C1338	QETN1CM-107Z	E CAP.	100μF 16V M
C1349-51	QETN1HM-106Z	E CAP.	10μF 50V M
C1352	QETN1EM-476Z	E CAP.	47μF 25V M
C1401	NCB31EK-333X	C CAP.	0.033μF 25V K
C1491	NCB31EK-473X	C CAP.	0.047μF 25V K
C1501-02	NDC31HJ-150X	C CAP.	150pF 50V J
C1510	QETN1HM-106Z	E CAP.	10μF 50V M
C1511	QETN1CM-107Z	E CAP.	100μF 16V M
C1512	NCB31CK-104X	C CAP.	0.1μF 16V K
C1513-14	NDC31HJ-471X	C CAP.	470pF 50V J
C1522	QETN1EM-476Z	E CAP.	47μF 25V M
C1523	NCB31CK-104X	C CAP.	0.1μF 16V K
C1564	NCB31CK-104X	C CAP.	0.1μF 16V K
C1591	NDC31HJ-471X	C CAP.	470pF 50V J
C1596	NCB31CK-104X	C CAP.	0.1μF 16V K
C1602-03	QFV71HJ-684Z	MF CAP.	0.68μF 50V J
C1604-05	NCB31CK-104X	C CAP.	0.1μF 16V K
C1606-07	QETN1CM-227Z	E CAP.	220μF 16V M
C1608-09	QETN1EM-228	E CAP.	2200μF 25V M
C1610	QETN1HM-106Z	E CAP.	10μF 50V M
C1612	QETN1HM-106Z	E CAP.	10μF 50V M
C1613	NCF31AZ-105X	C CAP.	1μF 10V Z
C1614	QETN1EM-476Z	E CAP.	47μF 25V M
C1615	NCF31AZ-105X	C CAP.	1μF 10V Z
C1616-17	QETN1HM-107Z	E CAP.	100μF 50V M
C1621	QETN1HM-106Z	E CAP.	10μF 50V M
C1622	QETN1EM-476Z	E CAP.	47μF 25V M
C1623	NCF31AZ-105X	C CAP.	1μF 10V Z
C1624	NCB31HK-103X	C CAP.	0.01μF 50V K
C1671	QENCLHM-475Z	BP E CAP.	4.7μF 50V M
C1672	QETN1HM-475Z	E CAP.	4.7μF 50V M
C1673	QETN1HM-106Z	E CAP.	10μF 50V M
C1674	NCB31HK-103X	C CAP.	0.01μF 50V K
C1675	QETN1CM-107Z	E CAP.	100μF 16V M
C1676-77	QETN1HM-106Z	E CAP.	10μF 50V M
C1678	QENCLHM-475Z	BP E CAP.	4.7μF 50V M
C1679	QETN1HM-106Z	E CAP.	10μF 50V M
C1680	NCB31HK-472X	C CAP.	4700pF 50V K
C1681	NCB31EK-273X	C CAP.	0.027μF 25V K
C1682	QETN1HM-105Z	E CAP.	1μF 50V M
C1683	QETN1CM-107Z	E CAP.	100μF 16V M
C1684-85	NCF31AZ-105X	C CAP.	1μF 10V Z
C1686-89	QETN1HM-106Z	E CAP.	10μF 50V M
C1701	QETN1HM-106Z	E CAP.	10μF 50V M
C1702	NCB31CK-563X	CHIP CAP.	0.056μF 16V K
C1751	NCB31CK-104X	C CAP.	0.1μF 16V K
C1752-54	NCB31AK-474X	C CAP.	0.47μF 10V K
C1755	NCB31CK-104X	C CAP.	0.1μF 16V K
COIL			
L1001	QQL244K-270Z	PEAKING COIL	
L1002-03	QQL244K-100Z	COIL	1μH K
L1004	NQL092K-100X	COIL	1μH

△ Symbol No.	Part No.	Part Name	Description
COIL			
L1101	QRN143J-0R0X	C R	0.0Ω 1/4W J
L1102	QQL244K-4R7Z	COIL	4.7μH K
L1112	QRN143J-0R0X	C R	0.0Ω 1/4W J
L1301-02	NQL092K-1R5X	INDUCTOR	
L1501	QQL244K-180Z	COIL	18μH K
DIODE			
D1314-20	MA111-X	SI DIODE	
D1599	MA111-X	SI DIODE	
D1602-04	MA111-X	SI DIODE	
D1608	MA111-X	SI DIODE	
D1609	MA3051/M/-X	ZENER DIODE	
D1610-11	MA3270/H/-X	ZENER DIODE	
D1612-13	MA3150/M/-X	ZENER DIODE	
D1614	MA111-X	SI DIODE	
D1771-74	MA3056/M/-X	ZENER DIODE	
D1951	1SR35-400A-T5	SI DIODE	
TRANSISTOR			
Q1101-02	2SC2412K/QR/-X	SI TRANSISTOR	
Q1301-03	2SC1740S/QR/-T	SI TRANSISTOR	
Q1304-05	2SC2412K/QR/-X	SI TRANSISTOR	
Q1306	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1307-09	2SC2412K/QR/-X	SI TRANSISTOR	
Q1310-12	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1313	DTC124EKA-X	DIGI. TRANSISTOR	
Q1401-03	2SC2412K/QR/-X	SI TRANSISTOR	
Q1501	2SC2412K/QR/-X	SI TRANSISTOR	
Q1591	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1592	2SC2412K/QR/-X	SI TRANSISTOR	
Q1601	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1604-05	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1606	DTC124EKA-X	DIGI. TRANSISTOR	
Q1607	DTC323TK-X	DIGI. TRANSISTOR	
Q1608	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1609-10	DTC323TK-X	DIGI. TRANSISTOR	
IC			
IC1101	MSP3415DQGB3GHX	I.C.(MONO-ANA)	
IC1301	SDA9380	I.C.(M)	
IC1303	TC4053BF/N/-YE	I.C.(DIGI-MOS)	
IC1501	TC74HC4538AF-X	I.C.(DIGI-MOS)	
IC1502	TC4053BF/N/-YE	I.C.(DIGI-MOS)	
IC1601	TDA2052V	I.C.(MONO-ANA)	
IC1602	BA4558F-X	I.C.(MONO-ANA)	
IC1671	AN5285K	I.C.(MONO-ANA)	
IC1672	NJM2701M-X	I.C.(MONO-ANA)	
IC1701	JLC1562BF-X	I.C.(DIGI-MOS)	
IC1751	MAX3232CPE	I.C.(MONO-ANA)	
OTHERS			
C1112	NRS463J-0R0X	MG R	0.0Ω 1/16W J
CN1002	QGA2501C1-11	W TO B CONNE	
J1601	QNN0281-002	PIN JACK	
K1001	NQR0389-003X	FERRITE BEADS	
K1101-02	NQR0389-003X	FERRITE BEADS	
K1301	NQR0413-003X	BEADS CORE	
LC1102	NQR0431-001X	EMI FILTER	
LC1301-03	NQR0431-001X	EMI FILTER	
TU1001	QAU0270-001	TUNER	
X1101	CE42546-001Z	CRYSTAL	
X1501	QAX0549-001Z	CRYSTAL	

■ POWER P.W. BOARD ASS'Y (SMF-9101A-U2)

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
△ R9902	QRF054K-3R3	UNF R	3.3Ω 5W K
R9903	QRF074K-5R6	UNF R	5.6Ω 7W K
R9904	QRL029J-683	OM R	68kΩ 2W J
R9909	QRL029J-683	OM R	68kΩ 2W J
△ R9910	QRZ9017-4R7	F R	4.7 Ω 1/4W J
R9911	QRE121J-152Y	C R	1.5kΩ 1/2W J
R9913	QRT029J-R33	MF R	0.33Ω 2W J
R9914	QRX01GJ-3R3	MF R	3.3Ω 1W J
R9915	QRE141J-681Y	C R	680Ω 1/4W J
R9916	QRE141J-332Y	C R	3.3kΩ 1/4W J
△ R9932	QRZ9017-470	F R	47 Ω 1/4W J
R9933	QRE121J-272Y	C R	2.7kΩ 1/2W J
R9934	QRE121J-564Y	C R	560kΩ 1/2W J
R9935	QRE141J-472Y	C R	4.7kΩ 1/4W J
R9936	QRX01GJ-3R9	MF R	3.9Ω 1W J
R9937	QRE121J-681Y	C R	680Ω 1/2W J
R9941	QRE121J-331Y	C R	330Ω 1/2W J
R9942	QRE121J-471Y	C R	470Ω 1/2W J
R9943	QRE141J-103Y	C R	10kΩ 1/4W J
R9944	QRE141J-103Y	C R	10kΩ 1/4W J
R9945	QRE141J-563Y	C R	56kΩ 1/4W J
R9946	QRE141J-103Y	C R	10kΩ 1/4W J
R9949	QRE141J-101Y	C R	100Ω 1/4W J
R9950	QRE141J-103Y	C R	10kΩ 1/4W J
R9952	QRE141J-221Y	C R	220Ω 1/4W J
R9953	QRE141J-472Y	C R	4.7kΩ 1/4W J
R9954	QRE141J-103Y	C R	10kΩ 1/4W J
R9955	QRE141J-332Y	C R	3.3kΩ 1/4W J
R9956	QRE141J-332Y	C R	3.3kΩ 1/4W J
R9957	QRE141J-822Y	C R	8.2kΩ 1/4W J
R9960	QRE141J-103Y	C R	10kΩ 1/4W J
R9963	QRG01GJ-102	OM R	1kΩ 1W J
R9967	QRE141J-153Y	C R	15kΩ 1/4W J
R9968	QRE141J-102Y	C R	1kΩ 1/4W J
CAPACITOR			
△ C9904	QFZ9075-104	MPP CAP.	0.1μFAC275V M
△ C9906	QCZ9054-472	C CAP.	4700pFAC250V Z
△ C9907	QCZ9054-472	C CAP.	4700pFAC250V Z
△ C9908	QCZ9054-472	C CAP.	4700pFAC250V Z
△ C9909	QEZ0199-127	E CAP.	120μF 400V M
C9910	QCB32HK-152Z	C CAP.	1500pF 500V K
C9911	QETN1HM-476Z	E CAP.	47μF 50V M
C9912-13	QCB31HK-471Z	C CAP.	470pF 50V K
C9914	QCZ0340-561	C CAP.	560pF 2kV K
C9916	QCB32HK-103	C CAP.	0.01μF 500V K
△ C9931	QCZ9054-472	C CAP.	4700pFAC250V Z
△ C9932	QCZ9054-472	C CAP.	4700pFAC250V Z
△ C9933	QCZ9054-472	C CAP.	4700pFAC250V Z
△ C9934	QETM2GM-226	E CAP.	22μF 400V M
C9936	QCZ0340-151	C CAP.	150pF 2kV K
C9937	QETN1HM-475Z	E CAP.	4.7μF 50V M
C9938	QCB31HK-222Z	C CAP.	2200pF 50V K
C9939	QFLC1HJ-103Z	M CAP.	0.01μF 50V J
C9940	QCB31HK-471Z	C CAP.	470pF 50V K
C9941	QETN1AM-108Z	E CAP.	1000μF 10V M
C9942	QFLC1HJ-102Z	M CAP.	1000pF 50V J
C9951-52	QETM1EM-338	E CAP.	3300μF 25V M
C9953	QETN2AM-475Z	E CAP.	4.7μF 100V M
C9954	QETN1CM-108	E CAP.	1000μF 16V M
C9955	QTM1EM-228	E CAP.	2200μF 25V M
C9967	QFV71HJ-104Z	MF CAP.	0.1μF 50V J
C9971	QFV71HJ-684Z	MF CAP.	0.68μF 50V J
C9972	QETN1CM-107Z	E CAP.	100μF 16V M
C9973	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C9974	QETN1CM-107Z	E CAP.	100μF 16V M
C9976	QETN1AM-337Z	E CAP.	330μF 10V M
C9978	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C9979	QETN1CM-107Z	E CAP.	100μF 16V M
C9981	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C9982	QETN1CM-107Z	E CAP.	100μF 16V M

△ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C9984	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C9985	QETN1CM-107Z	E CAP.	100μF 16V M
C9987	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C9988	QETN1CM-107Z	E CAP.	100μF 16V M
△ C9991	QCZ9079-222	C CAP.	2200pFAC250V M
△ C9993	QCZ9079-471	C CAP.	470pFAC250V K
TRANSFORMER			
△ T9901	QOS0145-001	SWITCH. TRANSF.	
△ T9931	QOS0151-001	SWICH. TRANSF.	
COIL			
L9951	QQL26AK-220Z	COIL	22μH K
L9952	QQL26AK-330Z	COIL	33μH K
L9960	QQL26AK-220Z	COIL	22μH K
DIODE			
△ D9901	G25B60	BRIDGE DIODE	
D9902	RG1C-LFA1	SI. DIODE	
D9904	AU01Z-T2	SI. DIODE	
D9905	AU01Z-T2	SI. DIODE	
D9906	MTZJ27B-T2	ZENER DIODE	
D9907	1SS133-T2	SI. DIODE	
D9910	MTZJ15B-T2	ZENER DIODE	
D9912	MTZJ27B-T2	ZENER DIODE	
△ D9931	S1WB/A/60-4101	SI. DIODE	
D9933	AU01Z-T2	SI. DIODE	
D9934	AU01Z-T2	SI. DIODE	
D9935	1SS133-T2	SI. DIODE	
D9941	RGP10J-5025-T3	SI. DIODE	
D9943	MTZJ7.5B-T2	ZENER DIODE	
D9944	NJM431L-T	I. C. (MONO-ANA)	
D9945	1SS133-T2	SI. DIODE	
D9951-52	FMX-G12S	SI. DIODE	
D9953	AU01Z-T2	SI. DIODE	
D9954	EU2-T3	SI. DIODE	
D9955	FMX-G12S	SI. DIODE	
D9956	NJM431L-T	I. C. (MONO-ANA)	
D9961	MTZJ33B-T2	ZENER DIODE	
D9962	1SS133-T2	SI. DIODE	
D9963	1SS133-T2	SI. DIODE	
D9964	1SS133-T2	SI. DIODE	
D9965	1SS133-T2	SI. DIODE	
D9966	1SS133-T2	SI. DIODE	
D9967	1SS133-T2	SI. DIODE	
TRANSISTOR			
Q9941-42	2SC1740S/QR/-T	SI. TRANSISTOR	
IC			
△ IC9901	STR-G6653	I. C. (HYBRID)	
IC9931	STR-L472/F7	I. C. (HYBRID)	
IC9961	BA12T	I. C. (MONO-ANA)	
IC9962	BA17809T	I. C. (MONO-ANA)	
IC9963	BA17808T	I. C.	
IC9964	BA05T	I. C. (MONO-ANA)	
IC9965	NJM2396F33	I. C. (MONO-ANA)	
OTHERS			
CN9004-05	QGBJ506M1-16	CONNECTOR	
△ CP9901	QMF043-2R0Z-J1	FUSE	2.0A
△ CP9931	QMF043-2R0Z-J1	FUSE	2.0A
△ CP9941	ICP-N25-Y	I. C. PROTECT	
△ CP9951	QMF034-4R0Z-J1	FUSE	4.0A
△ CP9952	QMF034-4R0Z-J1	FUSE	4.0A
K9901	QQR0679-001	FERRITE BEADS	
△ PC9901	PC123FY2	I. C. (PH. COUPLER)	
△ PC9931	PC123FY2	I. C. (PH. COUPLER)	
△ RY9931	QSK0099-001	RELAY	

LINE FILTER P.W. BOARD ASS'Y

(SMF-9102A-U2)

Symbol No.	Part No.	Part Name	Description
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CAPACITOR

C9901	QFZ9075-104	MPP CAP.	0.1μFAC275V M
C9902	QFZ9075-473	MPP CAP.	0.047μFAC275V M
C9903	QFZ9075-473	MPP CAP.	0.047μFAC275V M

OTHERS

	CEM002-001Z	FUSE CLIP	
	CEM002-001Z	FUSE CLIP	
F9901	QMF51D2-6R3J1	FUSE	
F9902	QMF51D2-2R5-J1	FUSE	
LF9901	QQR0810-001	LINE FILTER	
LF9903	QQR1095-003	LINE FILTER	
VA9901	QAF0052-621	VARISTOR	

FRONT CONTROL P.W. BOARD ASS'Y

(SMF-8301A-U2)

Symbol No.	Part No.	Part Name	Description
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RESISTOR

R8001-02	QRE121J-101Y	C R	100Ω 1/2W J
R8007	QRE121J-103Y	C R	10kΩ 1/2W J
R8010	NRSA63J-103X	MG R	10kΩ 1/16W J
R8012-13	NRSA63J-103X	MG R	10kΩ 1/16W J
R8021-22	NRSA63J-102X	MG R	1kΩ 1/16W J
R8035	QRE121J-151Y	C R	150Ω 1/2W J
R8501-04	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R8511	NRSA63J-101X	MG R	100Ω 1/16W J
R8512	NRSA63J-471X	MG R	470Ω 1/16W J
R8513	NRSA63J-101X	MG R	100Ω 1/16W J
R8514	NRSA63J-471X	MG R	470Ω 1/16W J
R8515-17	NRSA63J-750X	MG R	75Ω 1/16W J

CAPACITOR

C8001-02	NCB31HK-103X	C CAP.	0.01μF 50V K
C8005	NDC31HJ-680X	C CAP.	68pF 50V J
C8010-11	NCB31HK-472X	C CAP.	4700pF 50V K
C8019	QETN1CM-107Z	E CAP.	100μF 16V M
C8021	NCB31CK-104X	C CAP.	0.1μF 16V K

COIL

L8001	QQR0716-001Z	LEAD CORE	
L8002-03	QQL244K-5R6Z	COIL	5.6μH K
L8010-11	QQL244K-270Z	PEAKING COIL	
L8012	QQR0716-001Z	LEAD CORE	

DIODE

D8018	MA30B3-X	ZENER DIODE	
D8501-05	MA30B6/M/-X	ZENER DIODE	

OTHERS

CN8002	LC40576-001A	DSUB15P HOLDER	
J8001	QGA2501F1-11	W TO B CONNE	
J8003	QNS0169-001	PIN JACK	
J8501	QNZ0438-001	JACK	
LC8002	QNZ0061-001	CONNECTOR	
LC8503-05	NQR0169-001X	EMI FILTER	
S8001	NQR0169-001X	EMI FILTER	
S8002	QSW0619-003Z	PUSH SWITCH	MENU
S8003	QSW0619-003Z	PUSH SWITCH	CH DOWN
			CH UP

FRONT SW P.W. BOARD ASS'Y

(SMF-8302A-U2)

Symbol No.	Part No.	Part Name	Description
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RESISTOR

R8101	NRSA02J-103X	MG R	10kΩ 1/10W J
R8102	NRSA02J-101X	MG R	100Ω 1/10W J
R8201	NRSA02J-103X	MG R	10kΩ 1/10W J
R8202	NRSA02J-221X	MG R	220Ω 1/10W J
R8203	NRSA02J-103X	MG R	10kΩ 1/10W J
R8204	NRSA02J-221X	MG R	220Ω 1/10W J
R8901	QRE121J-105Y	C R	1MΩ 1/2W J

CAPACITOR

C8001	QEKCLCM-476Z	E CAP.	47μF 16V M
C8002	NCB21HK-104X	C CAP.	0.1μF 50V K
C8101	NRSA02J-333X	MG R	33kΩ 1/10W J

DIODE

D8201	GL3ED8	L.E.D.	
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TRANSISTOR

Q8201-02	2SA1037AK/QR/-X	SI TRANSISTOR	
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OTHERS

EF8001	LC30988-002A-H	L.E.D. HOLDER	
S8101	CE41865-222Y	EMI FILTER	
	QSW0619-003Z	PUSH SWITCH	

SPEAKER TERMINAL P.W. BOARD ASS'Y

(SMF-8303A-U2)

Symbol No.	Part No.	Part Name	Description
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RESISTOR

R8001	QRF054K-1R8	UNF R	1.8Ω 5W K
R8002	QRF054K-1R8	UNF R	1.8Ω 5W K

CAPACITOR

C8001	QCS31HJ-120Z	CH C CAP.	120pF 50V J
C8002	QCS31HJ-120Z	CH C CAP.	120pF 50V J

■ MICOM P.W. BOARD ASS'Y (SMF0M301A-U2)

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R0001	NRSA63J-102X	MG R	1kΩ 1/16W J
R0002	NRSA63J-392X	MG R	3.9kΩ 1/16W J
R0008-05	NRSA63J-102X	MG R	1kΩ 1/16W J
R0006	NRSA63J-152X	MG R	1.5kΩ 1/16W J
R0007-08	NRSA63J-102X	MG R	1kΩ 1/16W J
R0009-11	NRSA63J-103X	MG R	10kΩ 1/16W J
R0012	NRSA63J-273X	MG R	27kΩ 1/16W J
R0013	NRSA63J-221X	MG R	220Ω 1/16W J
R0014	NRSA63J-102X	MG R	1kΩ 1/16W J
R0015	NRSA63J-473X	MG R	47kΩ 1/16W J
R0016-17	NRSA63J-103X	MG R	10kΩ 1/16W J
R0018-20	NRSA63J-102X	MG R	1kΩ 1/16W J
R0022	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0024	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0027	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0030	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0032	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0034-53	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0035	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0057-77	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0081	NCF31CZ-104X	C CAP.	0.1μF 16V Z
R0087	NRSA63J-221X	MG R	220Ω 1/16W J
R0089-91	NRSA63J-221X	MG R	220Ω 1/16W J
R0092	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0093	NRSA63J-221X	MG R	220Ω 1/16W J
R0094	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0095	NRSA63J-473X	MG R	47kΩ 1/16W J
R0096	NRSA63J-221X	MG R	220Ω 1/16W J
R0097	NRSA63J-102X	MG R	1kΩ 1/16W J
R0099	NRSA63J-102X	MG R	1kΩ 1/16W J
R0100-02	NRSA63J-102X	MG R	1kΩ 1/16W J
R0108-06	NRSA63J-103X	MG R	10kΩ 1/16W J
R0107	NRSA63J-102X	MG R	1kΩ 1/16W J
R0110	NRSA63J-102X	MG R	1kΩ 1/16W J
R0111	NRSA63J-103X	MG R	10kΩ 1/16W J
R0112	NRSA63J-102X	MG R	1kΩ 1/16W J
R0113-14	NRSA63J-103X	MG R	10kΩ 1/16W J
R0119-20	NRSA63J-563X	MG R	56kΩ 1/16W J
R0121	NRSA63J-182X	MG R	1.8kΩ 1/16W J
R0122	NRSA63J-103X	MG R	10kΩ 1/16W J
R0123	NRSA63J-682X	MG R	6.8kΩ 1/16W J
R0124	NRSA63J-101X	MG R	100Ω 1/16W J
R0125-28	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0129	NRSA63J-823X	MG R	82kΩ 1/16W J
R0130	NRSA63J-104X	MG R	100kΩ 1/16W J
R0131	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0133	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0135	NRSA63J-102X	MG R	1kΩ 1/16W J
R0136	NRSA63J-103X	MG R	10kΩ 1/16W J
R0137-39	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R0144	NRSA63J-103X	MG R	10kΩ 1/16W J
R0147	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0151	NRSA63J-183X	MG R	18kΩ 1/16W J
R0152-54	NRSA63J-221X	MG R	220Ω 1/16W J
R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
R0157	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0158	NRSA63J-221X	MG R	220Ω 1/16W J
R0165	NRSA63J-103X	MG R	10kΩ 1/16W J
R0166	NRSA63J-223X	MG R	22kΩ 1/16W J
R0167	NRSA63J-103X	MG R	10kΩ 1/16W J
R0168	NRSA63J-471X	MG R	470Ω 1/16W J
R0201-02	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
CAPACITOR			
C0001	QETN0JM-477Z	E CAP.	470μF 6.3V M
C0002	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0003	NCB11CK-225X	C CAP.	2.2μF 16V K
C0004	QETN0JM-108Z	E CAP.	1000μF 6.3V M
C0005-06	NCB11CK-225X	C CAP.	2.2μF 16V K

△ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C0008	NCB11CK-225X	C CAP.	2.2μF 16V K
C0012-13	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0014	NCB31HK-682X	C CAP.	6800pF 50V K
C0015	NDC31HJ-391X	C CAP.	390pF 50V J
C0017	NDC31HJ-331X	C CAP.	330pF 50V J
C0019	NEH71CM-476X	E CAP.	47μF 16V M
C0020	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0021	NEH71CM-476X	E CAP.	47μF 16V M
C0022	NCF31AZ-105X	C CAP.	1μF 10V Z
C0023	NCB31EK-333X	C CAP.	0.033μF 25V K
C0024	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0027-28	NEH71CM-476X	E CAP.	47μF 16V M
C0029	NDC31HJ-151X	C CAP.	150pF 50V J
C0030-32	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0034-39	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0040	NDC31HJ-330X	C CAP.	33pF 50V J
C0041	NDC31HJ-270X	C CAP.	27pF 50V J
C0042-43	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0045-47	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0048	NEH71CM-476X	E CAP.	47μF 16V M
C0049-50	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0051	NEH71CM-476X	E CAP.	47μF 16V M
C0052-57	NCF31CZ-104X	C CAP.	0.1μF 16V Z
C0059-61	NEH71CM-106X	E CAP.	10μF 16V M
C0062	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
C0063-65	NDC31HJ-820X	C CAP.	82pF 50V J
COIL			
L0001	NQL092K-4R7X	INDUCTOR	
L0003	NQL092K-4R7X	INDUCTOR	
L0005-08	NQL092K-4R7X	INDUCTOR	
L0009	NQL094K-4R7X	INDUCTOR	
L0010-14	NQL092K-4R7X	INDUCTOR	
L0015-16	NQL094K-4R7X	INDUCTOR	
L0017-22	NQL092K-1R5X	INDUCTOR	
DIODE			
D0001-02	MA111-X	SI DIODE	
D0003	MA3068/M/-X	ZENER DIODE	
D0004	MA3027-X	ZENER DIODE	
D0005-08	MA3056/M/-X	ZENER DIODE	
TRANSISTOR			
Q0001-02	2SC2712/YG/-X	SI TRANSISTOR	
Q0007-08	2SA1162/YG/-X	SI TRANSISTOR	
Q0009-12	2SC2712/YG/-X	SI TRANSISTOR	
Q0021-22	2SC2712/YG/-X	SI TRANSISTOR	
IC			
IC0001	SDA6000	I.C.(M)	
IC0002	MR27V1652ERA	IC	
IC0003	K45J161622D-TC80	I.C.(D-RAM)	
IC0004	AT24C32-42PD20E	I.C.	(SERVICE)
IC0005	S-80828ANNP-W	I.C.(MONO-ANA)	
IC0901	TA48M025F-X	I.C.(M)	
IC0902	TA48M033F-X	I.C.(M)	
OTHERS			
CN0007	CM42856-001	EP ROM SEAL	
K0001	CEMS007-042	IC SOCKET	
K0002	CEMS007-008	I.C. SOCKET	
K0003	QGB1505K1-50	CONNECTOR	
K0004	NRSA63J-390X	MG R	39Ω 1/16W J
K0005	NQR089-003X	FERRITE BEADS	
K0006	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
K0007	NQR089-003X	FERRITE BEADS	
K0008	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
K0009	NQR0813-007X	EMI FILTER	
K0010	NQR0431-001X	EMI FILTER	
K0011	QAX0669-001Z	CRYSTAL	

AV SW P.W.BOARD ASS'Y **(SMF0S301A-U2)**

Symbol No.	Part No.	Part Name	Description
RESISTOR			
R0001-04	NRS463J-103X	MG R	10kΩ 1/16W J
R0005-06	NRS463J-123X	MG R	12kΩ 1/16W J
R0007-10	NRS463J-103X	MG R	10kΩ 1/16W J
R0011-12	NRS463J-681X	MG R	680Ω 1/16W J
R0013-14	NRS463J-103X	MG R	10kΩ 1/16W J
R0015	NRS463J-104X	MG R	100kΩ 1/16W J
R0110-11	NRS463J-103X	MG R	10kΩ 1/16W J
R0112-13	NRS463J-823X	MG R	82kΩ 1/16W J
R0114	NRS463J-333X	MG R	33kΩ 1/16W J
R0115	NRS463J-473X	MG R	47kΩ 1/16W J
R0116	NRS463J-823X	MG R	82kΩ 1/16W J
R0117	NRS463J-223X	MG R	22kΩ 1/16W J
R0118	NRS463J-473X	MG R	47kΩ 1/16W J
R0119	NRS463J-153X	MG R	15kΩ 1/16W J
R0120	NRS463J-273X	MG R	27kΩ 1/16W J
R0121	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0122	NRS463J-473X	MG R	47kΩ 1/16W J
R0123	NRS463J-823X	MG R	82kΩ 1/16W J
R0124	NRS463J-153X	MG R	15kΩ 1/16W J
R0125	NRS463J-223X	MG R	22kΩ 1/16W J
R0126	NRS463J-473X	MG R	47kΩ 1/16W J
R0127	NRS463J-273X	MG R	27kΩ 1/16W J
R0128-29	NRS463J-823X	MG R	82kΩ 1/16W J
R0130-31	NRS463J-391X	MG R	390Ω 1/16W J
R0132	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0133	NRS463J-333X	MG R	33kΩ 1/16W J
R0134	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0135	NRS463J-333X	MG R	33kΩ 1/16W J
R0136	NRS463J-103X	MG R	10kΩ 1/16W J
R0137	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0138-39	NRS463J-333X	MG R	33kΩ 1/16W J
R0140	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0141	NRS463J-333X	MG R	33kΩ 1/16W J
R0142	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0143-44	NRS463J-333X	MG R	33kΩ 1/16W J
R0145	NRS463J-103X	MG R	10kΩ 1/16W J
R0146	NRS463J-473X	MG R	47kΩ 1/16W J
R0147	NRS463J-223X	MG R	22kΩ 1/16W J
R0148-49	NRS463J-391X	MG R	390Ω 1/16W J
R0150-51	NRS463J-104X	MG R	100kΩ 1/16W J
R0152-67	NRS463J-101X	MG R	100Ω 1/16W J
R0168	NRS463J-750X	MG R	75Ω 1/16W J
R0169	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0170	NRS463J-333X	MG R	33kΩ 1/16W J
R0171	NRS463J-750X	MG R	75Ω 1/16W J
R0172	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0173	NRS463J-333X	MG R	33kΩ 1/16W J
R0174	NRS463J-750X	MG R	75Ω 1/16W J
R0175	NRS463J-333X	MG R	33kΩ 1/16W J
R0176	NRS463J-103X	MG R	10kΩ 1/16W J
R0177	NRS463J-823X	MG R	82kΩ 1/16W J
R0178	NRS463J-153X	MG R	15kΩ 1/16W J
R0179	NRS463J-473X	MG R	47kΩ 1/16W J
R0180	NRS463J-273X	MG R	27kΩ 1/16W J
R0181-82	NRS463J-562X	MG R	5.6kΩ 1/16W J
R0183-84	NRS463J-102X	MG R	1kΩ 1/16W J
R0185-90	NRS463J-101X	MG R	100Ω 1/16W J
R0191	NRS463J-222X	MG R	2.2kΩ 1/16W J
R0192-93	NRS463J-101X	MG R	100Ω 1/16W J
R0194-95	NRS463J-221X	MG R	220Ω 1/16W J
R0196	QRG01GJ-101	OM R	100Ω 1/16W J
R0197	QRK126J-181X	C R	180Ω 1/2W J
R0198	NRS463J-750X	MG R	75Ω 1/16W J
R0199	NRS463J-101X	MG R	100Ω 1/16W J
R0200	NRS463J-750X	MG R	75Ω 1/16W J
R0201	QRK126J-151X	C R	150Ω 1/2W J
R0202	NRS463J-222X	MG R	2.2kΩ 1/16W J

Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C0111-12	QETNLCM-477Z	E CAP.	470μF 16V M
C0113-14	NCB31HK-102X	C CAP.	1000pF 50V K
C0115-17	QETNLHM-106Z	E CAP.	10μF 50V M
C0118-19	QETNLHM-105Z	E CAP.	1μF 50V M
C0120	NCB31HK-103X	C CAP.	0.01μF 50V K
C0121	QETNLHM-105Z	E CAP.	1μF 50V M
C0122	QETNLHM-106Z	E CAP.	10μF 50V M
C0123	QETNLHM-105Z	E CAP.	1μF 50V M
C0124	NCB31HK-103X	C CAP.	0.01μF 50V K
C0125	NCB31HK-102X	C CAP.	1000pF 50V K
C0126-28	QETNLHM-106Z	E CAP.	10μF 50V M
C0129	QETNLHM-105Z	E CAP.	1μF 50V M
C0130	NCB31HK-103X	C CAP.	0.01μF 50V K
C0131	QETNLHM-105Z	E CAP.	1μF 50V M
C0132	NCB31HK-103X	C CAP.	0.01μF 50V K
C0133	QETNLHM-106Z	E CAP.	10μF 50V M
C0134	QETNLHM-105Z	E CAP.	1μF 50V M
C0135	QETNLHM-106Z	E CAP.	10μF 50V M
C0136	QETNLHM-105Z	E CAP.	1μF 50V M
C0137	NCB31HK-103X	C CAP.	0.01μF 50V K
C0138-39	QENCLEM-105Z	E CAP.	1μF 50V M
C0140	QENCLEM-106Z	BP E CAP.	10μF 25V M
C0141-47	NCB31HK-103X	C CAP.	0.01μF 50V K
C0148	QETNLHM-106Z	E CAP.	10μF 50V M
C0149	QENCLEM-106Z	BP E CAP.	10μF 25V M
C0150-51	QETNLCM-107Z	E CAP.	100μF 16V M
C0152	QETNLCM-477Z	E CAP.	470μF 16V M
C0153	NCB31HK-103X	C CAP.	0.01μF 50V K
C0154	QETNLCM-107Z	E CAP.	100μF 16V M
C0155	NDC31HJ-150X	C CAP.	15pF 50V J
C0156-57	NCF31AZ-105X	C CAP.	1μF 10V Z
C0158	QETNLEM-476Z	E CAP.	47μF 25V M
C0159-60	QETNLHM-106Z	E CAP.	10μF 50V M

DIODE

D0109-13	MA3120/M/-X	ZENER DIODE
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TRANSISTOR

Q0101-02	2SC2412K/QR/-X	SI TRANSISTOR
Q0103-05	DTC323TK-X	DIGI. TRANSISTOR
Q0106-09	2SC2412K/QR/-X	SI TRANSISTOR
Q0110	2SA1037AK/QR/-X	SI TRANSISTOR
Q0111	DTC323TK-X	DIGI. TRANSISTOR
Q0112	2SA1037AK/QR/-X	SI TRANSISTOR
Q0113-15	2SC2412K/QR/-X	SI TRANSISTOR
Q0116	2SA933AS/QR/-T	SI TRANSISTOR
Q0117	2SC1740S/QR/-T	SI TRANSISTOR
Q0118	2SC2412K/QR/-X	SI TRANSISTOR
Q0119	2SA1037AK/QR/-X	SI TRANSISTOR
Q0120-21	DTC323TK-X	DIGI. TRANSISTOR

IC

IC0101	CXA2069Q	I.C.(MONO-ANA)
IC0102	BA4558F-X	I.C.(MONO-ANA)

OTHERS

CN0001	QGB1505K1-50	CONNECTOR
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100Hz P.W. BOARD ASS'Y (SMF0Z301A-U2)

Symbol No.	Part No.	Part Name	Description
RESISTOR			
R0007-09	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0010-12	NRSA63J-101X	MG R	100Ω 1/16W J
R0101	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R0102-03	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R0104	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R0105-06	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R0107-13	NRSA63J-750X	MG R	75Ω 1/16W J
R0121	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0123	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0124-25	NRSA63J-101X	MG R	100Ω 1/16W J
R0132-39	NRSA63J-100X	MG R	10Ω 1/16W J
R0141	NRSA63J-100X	MG R	10Ω 1/16W J
R0151	NRSA63J-332X	MG R	3.3kΩ 1/16W J
R0152-53	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R0154	NRSA63J-750X	MG R	75Ω 1/16W J
R0155-56	NRSA63J-101X	MG R	100Ω 1/16W J
R0170	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0179-86	NRSA63J-100X	MG R	10Ω 1/16W J
R0188	NRSA63J-100X	MG R	10Ω 1/16W J
R0191-96	NRSA63J-750X	MG R	75Ω 1/16W J
R0198	NRSA63J-103X	MG R	10kΩ 1/16W J
R0201	NRSA63J-121X	MG R	120Ω 1/16W J
R0202-03	NRSA63J-101X	MG R	100Ω 1/16W J
R0204	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0217	NRSA63J-103X	MG R	10kΩ 1/16W J
R0218	NRSA63J-333X	MG R	33kΩ 1/16W J
R0219	NRSA63J-103X	MG R	10kΩ 1/16W J
R0220	NRSA63J-822X	MG R	8.2kΩ 1/16W J
R0221	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0223	NRSA63J-473X	MG R	47kΩ 1/16W J
R0225	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0230	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0251	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R0252	NRSA63J-750X	MG R	75Ω 1/16W J
R0254	NRSA63J-391X	MG R	390Ω 1/16W J
R0255-56	NRSA63J-221X	MG R	220Ω 1/16W J
R0257	NRSA63J-271X	MG R	270Ω 1/16W J
R0258	NRSA63J-272X	MG R	2.7kΩ 1/16W J
R0259	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0261	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R0264	NRSA63J-391X	MG R	390Ω 1/16W J
R0271	NRSA63J-222X	MG R	2.2kΩ 1/16W J
R0274	NRSA63J-391X	MG R	390Ω 1/16W J
R0281	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0291-92	NRSA63J-152X	MG R	1.5kΩ 1/16W J
R0301-03	NRSA63J-104X	MG R	100kΩ 1/16W J
R0304-05	NRSA63J-101X	MG R	100Ω 1/16W J
R0306-08	NRSA63J-152X	MG R	1.5kΩ 1/16W J
R0401	NRSA63J-473X	MG R	47kΩ 1/16W J
R0402	NRSA63J-472X	MG R	4.7kΩ 1/16W J
R0404	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0407	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
R0409	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
CAPACITOR			
C0001	NCB31CK-104X	C CAP.	0.1μF 16V K
C0002	NEH71CM-476X	E CAP.	47μF 16V M
C0003	NCB31CK-104X	C CAP.	0.1μF 16V K
C0004	NEH71CM-476X	E CAP.	47μF 16V M
C0005	NCB31CK-104X	C CAP.	0.1μF 16V K
C0006	NEH71CM-476X	E CAP.	47μF 16V M
C0007-09	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
C0101	NEH71CM-106X	E CAP.	10μF 16V M
C0102	NCB31EK-473X	C CAP.	0.047μF 25V K
C0103	NEH71CM-476X	E CAP.	47μF 16V M
C0104	NCB31HK-152X	C CAP.	1500pF 50V K
C0105	NDC31HJ-102X	C CAP.	1000pF 50V J
C0106	NCB31CK-104X	C CAP.	0.1μF 16V K
C0107	NCF31CZ-224X	C CAP.	0.22μF 16V Z

Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C0108	NCB31HK-152X	C CAP.	1500pF 50V K
C0109	NDC31HJ-391X	C CAP.	390pF 50V J
C0110	NEH71CM-106X	E CAP.	10μF 16V M
C0111	NCB31EK-473X	C CAP.	0.047μF 25V K
C0112	NDC31HJ-331X	C CAP.	330pF 50V J
C0113-18	NCF31CZ-224X	C CAP.	0.22μF 16V Z
C0119-24	NDC31HJ-331X	C CAP.	330pF 50V J
C0125-26	NDC31HJ-3R0X	C CAP.	3.0pF 50V J
C0128	NCB31CK-104X	C CAP.	0.1μF 16V K
C0129	NCF31CZ-224X	C CAP.	0.22μF 16V Z
C0130	NDC31HJ-391X	C CAP.	390pF 50V J
C0131	NCB31HK-152X	C CAP.	1500pF 50V K
C0132	NCB31EK-473X	C CAP.	0.047μF 25V K
C0133	NCB31HK-152X	C CAP.	1500pF 50V K
C0134	NCB31CK-683X	CHIP CAP.	0.068μF 16V K
C0136-37	NCB31CK-683X	CHIP CAP.	0.068μF 16V K
C0138	NCB31HK-152X	C CAP.	1500pF 50V K
C0139	NCB31EK-473X	C CAP.	0.047μF 25V K
C0140	NEH71CM-476X	E CAP.	47μF 16V M
C0141	NDC31HJ-100X	C CAP.	10pF 50V J
C0151	NEH71CM-106X	E CAP.	10μF 16V M
C0152	NCB31EK-473X	C CAP.	0.047μF 25V K
C0153	NEH71CM-476X	E CAP.	47μF 16V M
C0154	NCB31HK-152X	C CAP.	1500pF 50V K
C0155	NCB31CK-104X	C CAP.	0.1μF 16V K
C0156	NCF31CZ-224X	C CAP.	0.22μF 16V Z
C0157	NCB31HK-152X	C CAP.	1500pF 50V K
C0158	NDC31HJ-391X	C CAP.	390pF 50V J
C0159	NEH71CM-106X	E CAP.	10μF 16V M
C0160	NCB31EK-473X	C CAP.	0.047μF 25V K
C0161	NDC31HJ-331X	C CAP.	330pF 50V J
C0162-67	NCF31CZ-224X	C CAP.	0.22μF 16V Z
C0169-73	NDC31HJ-331X	C CAP.	330pF 50V J
C0174-75	NDC31HJ-3R0X	C CAP.	3.0pF 50V J
C0176	NDC31HJ-331X	C CAP.	330pF 50V J
C0177	NCB31CK-104X	C CAP.	0.1μF 16V K
C0178	NCF31CZ-224X	C CAP.	0.22μF 16V Z
C0179	NDC31HJ-391X	C CAP.	390pF 50V J
C0180	NCB31HK-152X	C CAP.	1500pF 50V K
C0181	NCB31EK-473X	C CAP.	0.047μF 25V K
C0182	NCB31HK-152X	C CAP.	1500pF 50V K
C0183	NCB31CK-683X	CHIP CAP.	0.068μF 16V K
C0185-86	NCB31CK-683X	CHIP CAP.	0.068μF 16V K
C0187	NCB31HK-152X	C CAP.	1500pF 50V K
C0188	NCB31EK-473X	C CAP.	0.047μF 25V K
C0189	NEH71CM-476X	E CAP.	47μF 16V M
C0191	NCB31CK-104X	C CAP.	0.1μF 16V K
C0201	NEH71CM-476X	E CAP.	47μF 16V M
C0202-05	NCB31CK-104X	C CAP.	0.1μF 16V K
C0206	NEH71CM-476X	E CAP.	47μF 16V M
C0207-11	NCB31CK-104X	C CAP.	0.1μF 16V K
C0212-13	NDC31HJ-180X	C CAP.	18pF 50V J
C0214-17	NCB31CK-104X	C CAP.	0.1μF 16V K
C0218	NDC31HJ-561X	C CAP.	560pF 50V J
C0219	NEH71CM-476X	E CAP.	47μF 16V M
C0220-35	NCB31CK-104X	C CAP.	0.1μF 16V K
C0237-38	NEH71CM-106X	E CAP.	10μF 16V M
C0239-44	NCB31CK-104X	C CAP.	0.1μF 16V K
C0251	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
C0252-53	NCB31CK-104X	C CAP.	0.1μF 16V K
C0254	NDC31HJ-120X	C CAP.	12pF 50V J
C0255	NDC31HJ-270X	C CAP.	27pF 50V J
C0256	NEH71CM-106X	E CAP.	10μF 16V M
C0261	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
C0262-63	NCB31CK-104X	C CAP.	0.1μF 16V K
C0264	NDC31HJ-120X	C CAP.	12pF 50V J
C0265	NDC31HJ-270X	C CAP.	27pF 50V J
C0271	NDC31HJ-4R0X	C CAP.	4.0pF 50V J
C0272-73	NCB31CK-104X	C CAP.	0.1μF 16V K
C0274	NDC31HJ-120X	C CAP.	12pF 50V J
C0275	NDC31HJ-270X	C CAP.	27pF 50V J
C0301	NEH71CM-476X	E CAP.	47μF 16V M

Symbol No.	Part No.	Part Name	Description
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CAPACITOR

C0302-03	NCB31CK-104X	C CAP.	0.1 μ F 16V K
C0402-03	NCB31CK-104X	C CAP.	0.1 μ F 16V K
C0404	NDC31HJ-330X	C CAP.	33pF 50V J

COIL

L0001-03	NQL092K-1R5X	INDUCTOR	
L0101	NQL034K-150X	INDUCTOR	
L0102-08	NQL092K-3R3X	INDUCTOR	
L0109	NQL034K-6R8X	INDUCTOR	
L0151	NQL034K-150X	INDUCTOR	
L0152-57	NQL092K-3R3X	INDUCTOR	
L0159	NQL034K-6R8X	INDUCTOR	
L0201-03	NQL034K-100X	INDUCTOR	
L0204	QQL244K-4R7Z	COIL	4.7 μ H K
L0205-08	NQL034K-100X	INDUCTOR	
L0209-10	NQL092K-1R5X	INDUCTOR	
L0251	NQL092K-5R6X	INDUCTOR	
L0261	NQL092K-5R6X	INDUCTOR	
L0271	NQL092K-5R6X	INDUCTOR	

DIODE

D0201-04	MA111-X	SI. DIODE	
D0401	MA111-X	SI. DIODE	

TRANSISTOR

Q0101-02	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0151	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0201	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0251-52	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0253	2SC2412K/QR/-X	SI. TRANSISTOR	
Q0261	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0271	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0301-03	2SC2412K/QR/-X	SI. TRANSISTOR	

IC

IC0101	VPC3230D-QA-B3	I. C. (M)	
IC0151	VPC3230D-QA-B3	I. C. (M)	
IC0201	SAA4979H/V103BD	I. C. (MONO-ANA)	
IC0202	OM4994H	I. C. (M)	
IC0203-05	SAA4955HL/V1	I. C. (MONO-ANA)	

Symbol No.	Part No.	Part Name	Description
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IC

IC0206-10	TC7W08F-X	I. C. (ECL-LOGIC)	
IC0211	TC7WHU04FU-X	I. C. (DIGI-MOS)	
IC0301	TDA9178T/N1-X	I. C. (MONO-ANA)	
IC0401	S-80828ANNP-W	I. C. (MONO-ANA)	
IC0402	TC7WH34FU-X	I. C. (DIGI-MOS)	

OTHERS

CN0003	QGB1505K1-50	CONNECTOR	
LC0010-12	NQR0313-009X	EMI FILTER	
LC0013	NQR0313-004X	EMI FILTER	
LC0014-15	NQR0313-007X	EMI FILTER	
X0101	QAX0655-001Z	CRYSTAL	
X0151	QAX0655-001Z	CRYSTAL	
X0201	QAX0273-001Z	CRYSTAL	

**■ SIDE JACK P.W. BOARD ASS'Y
(SMF0J301A-U2)**

Symbol No.	Part No.	Part Name	Description
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RESISTOR

R0101-09	NRS463J-750X	MG R	75 Ω 1/16W J
R0205-05	NRS463J-750X	MG R	75 Ω 1/16W J

CAPACITOR

C0101-12	NCB31HK-472X	C CAP.	4700pF 50V K
C0113-14	NCB31HK-103X	C CAP.	0.01 μ F 50V K

DIODE

D0101-05	MA3056/M/-X	ZENER DIODE	
D0114-20	MA3056/M/-X	ZENER DIODE	
D0131	MA3056/M/-X	ZENER DIODE	

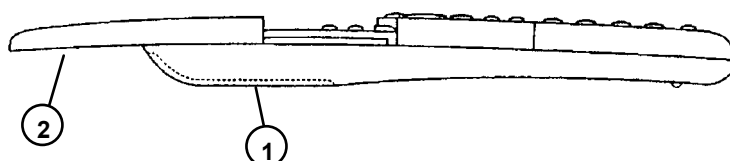
OTHERS

J0001-03	CE40529-006	SCART CONNECTOR	
J0004	QNN0493-001	PIN JACK	
K0101-06	CE42681-001Y	BEADS CORE	

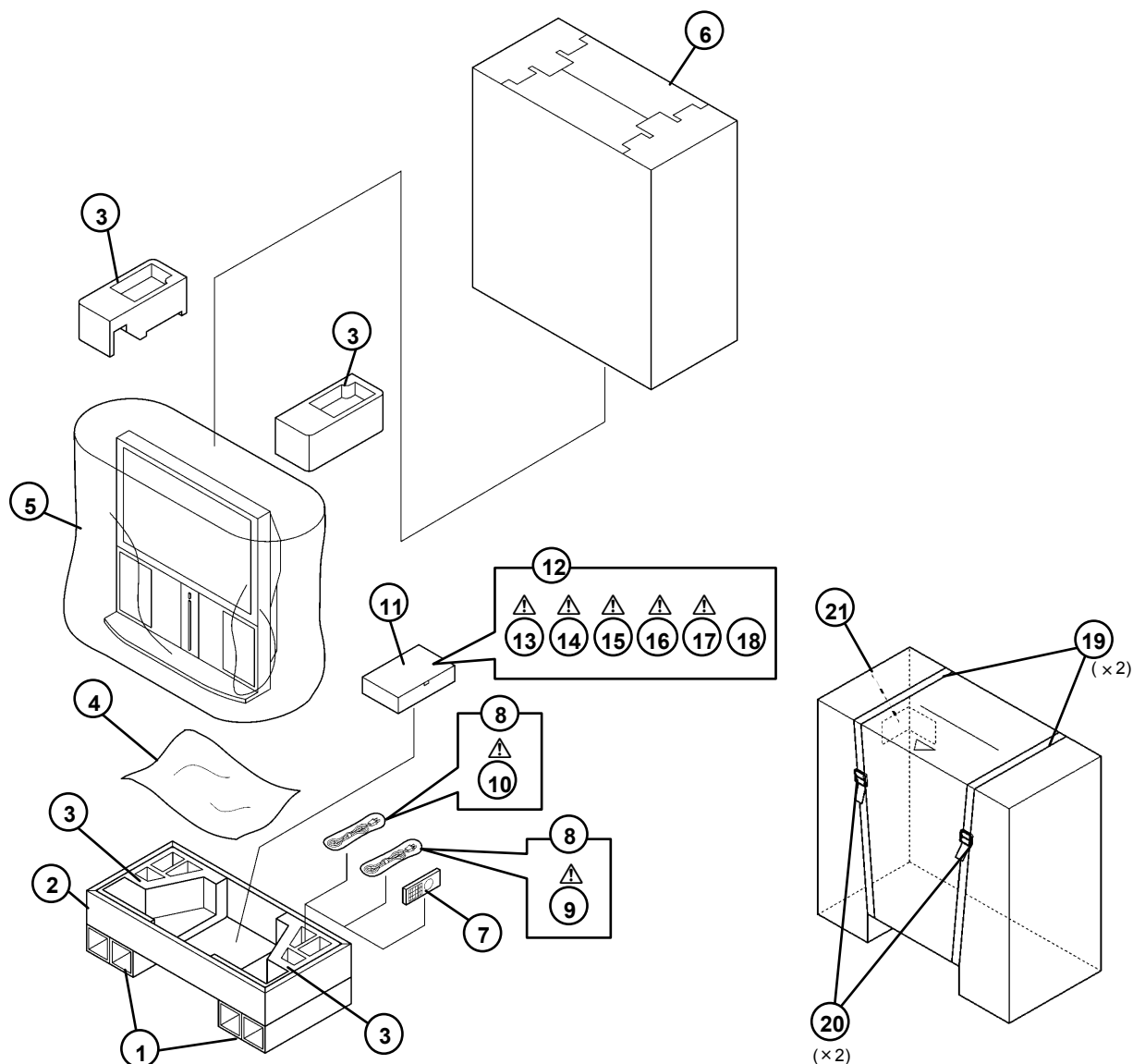
REMOTE CONTROL UNIT PARTS LIST (RM-C59-1C)

Ref.No.	Part No.	Part Name	Description
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1	2AA027770	BATTERY COVER	
2	2AA027760	SLIDE COVER	



PACKING



PACKING PARTS LIST

△ Ref.No.	Part No.	Part Name	Description
1	AEM1071-001A-U	BOX BASE	
2	AEM1070-001A-U	BOX SLEEVE	
3	LC11072-002A-U	CUSHION ASSY	4pcs in 1set
4	AEM4120-001A-U	POLY SHEET	
5	AEM1067-001A-E	POLY BAG	
6	AEM1069-001A-U	BOX TAP	
7	RM-C59-1C	REMOCON UNIT	
8	QPA01203005	POLY BAG	(×2)
△ 9	QMPLO50-250-K	POWER CORD	
△ 10	QMPP070-250-K	POWER CORD	
11	AEM4123-001A-U	ACCESSORY PACK	
12	AEM3021-001A-E	POLY BAG	
△ 13	LC41316-001A	WIRE ASSY	
△ 14	LCT1119-001A-U	INST.BOOK	
△ 15	LCT1120-001A-U	INST.BOOK	
△ 16	LCT1121-001A-U	INST.BOOK	
△ 17	BT-54013-1E	WARRANTY CARD	
18	42PD20ES-HSAE	S. DIAGRAM	(SERVICE)[ITALY EDITION]
19	AEM4119-001A-U	BANDING	(×2)
20	AEM4119-002A-U	BANDING	(×2)
21	AEM1064-002-E	EURO LABEL	

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Memo

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JVC

VICTOR COMPANY OF JAPAN, LIMITED

HOME AV NETWORK BUSINESS UNIT 12, 3-chome, Moriya-cho, Kanagawa-ku, Yokohama, Kanagawa-prefecture, 221-8528, Japan

AV42PD20 ES-U #5



VP 0205
DP1058



SERVICE MANUAL

PLASMA WIDE TELEVISION

AV42PD20ES

BASIC CHASSIS

MF

Supplementary

This model corresponded to the printed circuit board exchange in the PDP unit.
Therefore, this service manual describes only the information relevant to it.
For details other than those described in this manual, please refer to the AV42PD20ES service manual (No.51955 2002/04).

TABLE OF CONTENTS

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5.	CONFIRMING REFERENCE VOLTAGE	9
6.	ADJUSTMENTS	10
7.	PARTS LIST	11

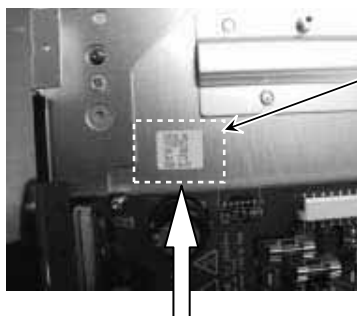
NOTES AT THE TIME OF PW BOARD EXCHANGE

It will become the cause of failure if dust adheres to the inside of a connector, or a flat wire and a point-of-contact part.

When the PW board is exchanged, be careful of the dust and dirt of the inside of a connector, or a flat wire and a point-of-contact part enough.

■CONFIRMING ID NUMBER AND CODE NUMBER

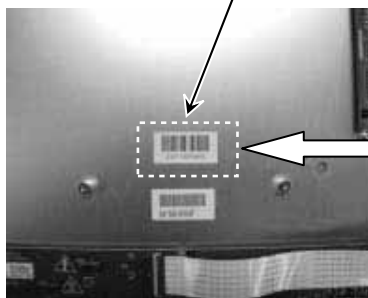
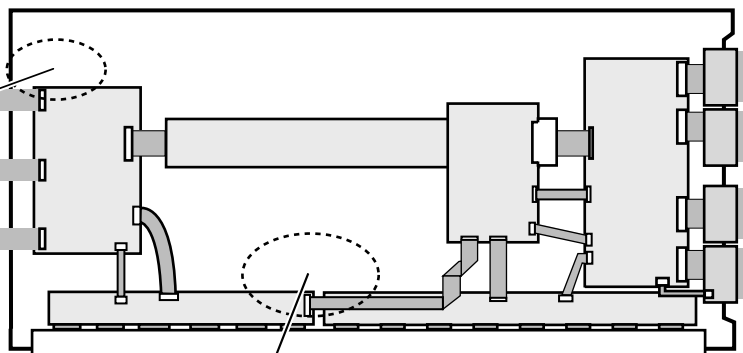
NOTE : The panel's ID number is used when you reference the characteristic voltage value of the panel on web site.



Voltage and CODE No.

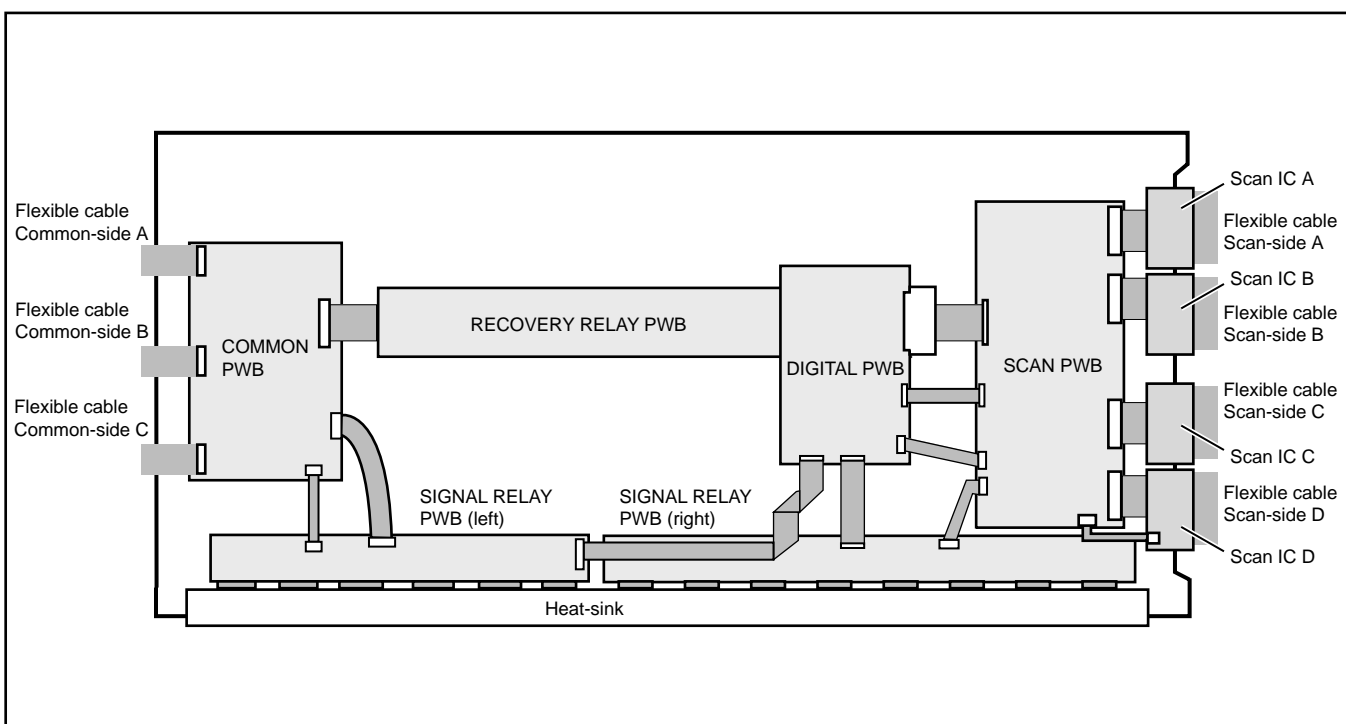
SERIAL NO.
001200456
Vd=70V
Vs=182.1V
CODE AA-01

For example
CODE : AA



PANEL ID No.
212912220251
(12 figures)

■MAIN PARTS LOCATION



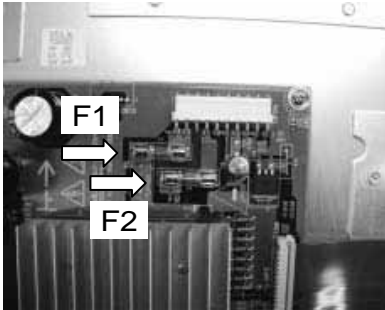
■ INSPECTION OF COMPONENTS ON THE PW BOARD

Diagnose the PW board in PDP unit by checking defects based on the following items.

1. INSPECTION OF FUSES

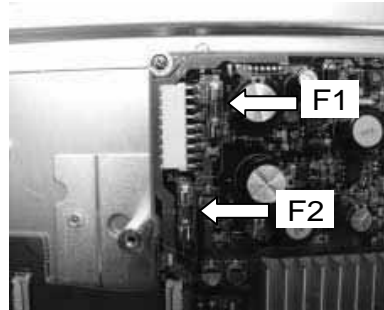
Measure the resistance of each fuse with a circuit tester, and check OK or NG.

1.1 Glass fuses (F1, F2) on the COMMON PWB



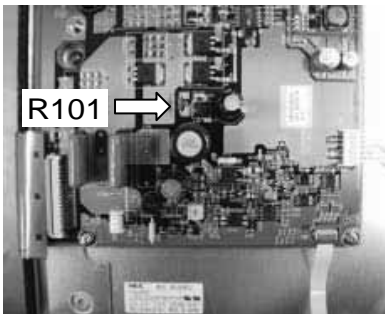
OK: Short
NG: Open

1.2 Glass fuses (F1, F2) on the SCAN PWB



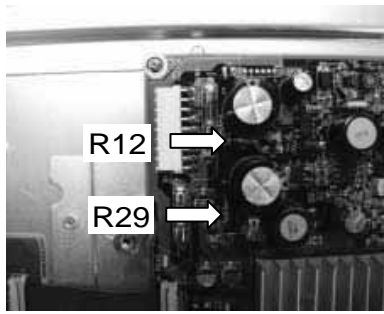
OK: Short
NG: Open

1.3 Fuse resistance (R101) on the COMMON PWB



R101
OK: Approx. 2.2Ω
NG: Open

1.4 Fuse resistances (R12, R29) on the SCAN PWB

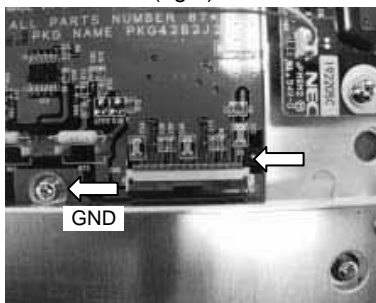


R12
OK: Approx. 2.2Ω
NG: Open
R29
OK: Approx. 4.7Ω
NG: Open

2. INSPECTION OF ALARM LINES

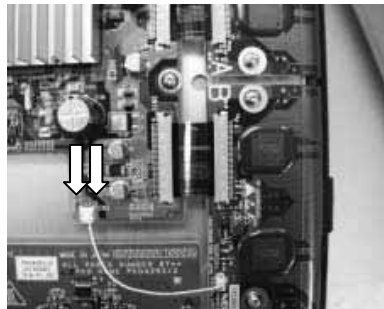
According to the following procedures, measure with a circuit tester and check OK or NG.

2.1 The conduction between the pin 50 of the connector [CN8] and GND on the SIGNAL RELAY PWB (right)



OK: Short
NG: Open

2.2 The conduction between the pins of the connector [CN3] on the SCAN PWB

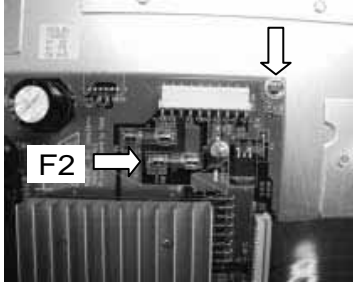


OK: Short
NG: Open

3. INSPECTION OF DATA ICS

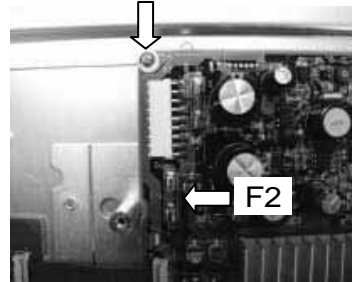
According to the following procedures, measure with a circuit tester and check OK or NG.

3.1 The conduction between the fuse [F2] and GND on the COMMON PWB



OK: Open
NG: Short

3.2 The conduction between the fuse [F2] and GND on the SCAN PWB



OK: Open
NG: Short

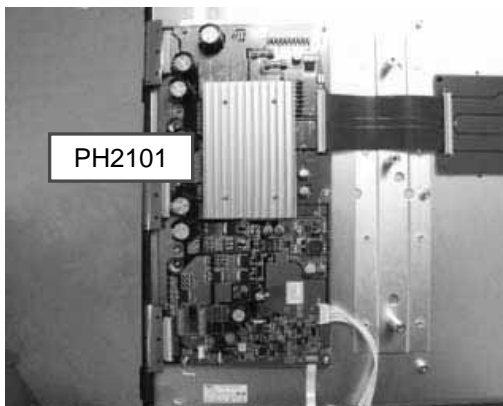
Check the conduction between the fuse [F2] and the ground on the COMMON PWB or SCAN PWB. In case of "short", one of the data ICs connecting the SIGNAL RELAY PWB may be defective, and you should check whether there is any trace of damage on the data IC's surface after removing the heat-sink on the data IC.

4. INSPECTION OF POWER ICS

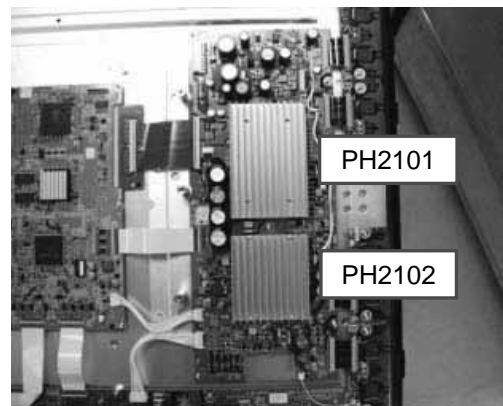
According to the following procedures, measure with a circuit tester and check OK or NG.

The allocation of power ICs to be checked is shown below.

COMMON PWB

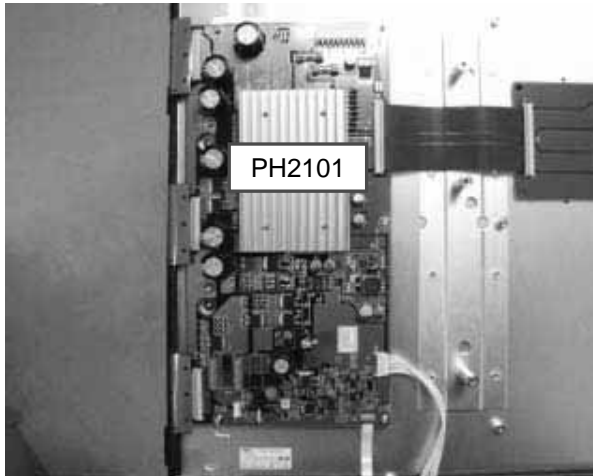


SCAN PWB



4.1 PH2101 on the COMMON PWB

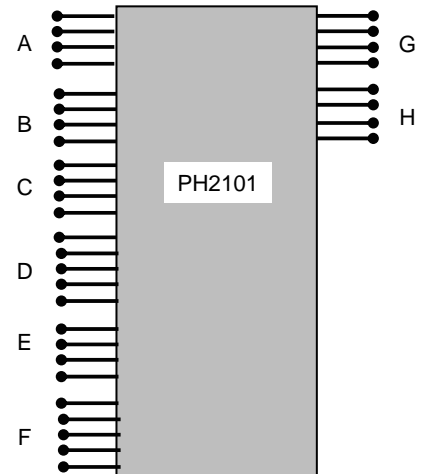
Check each point of power IC as shown below.



Check point

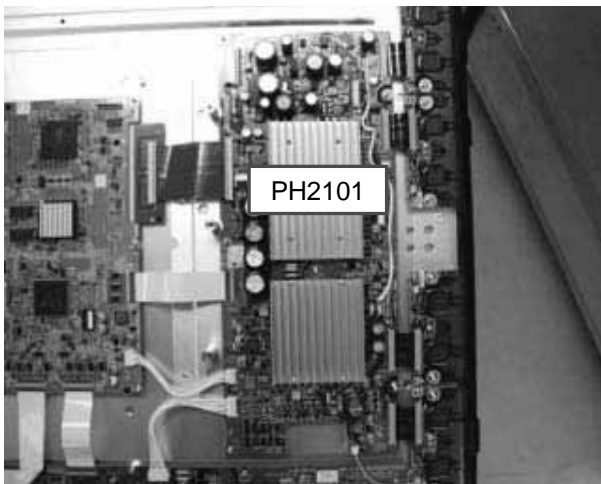
Between
A - G
B - H
C - D
E - F

OK: Over $1k\Omega$
NG: Short



4.2 PH2101 on the SCAN PWB

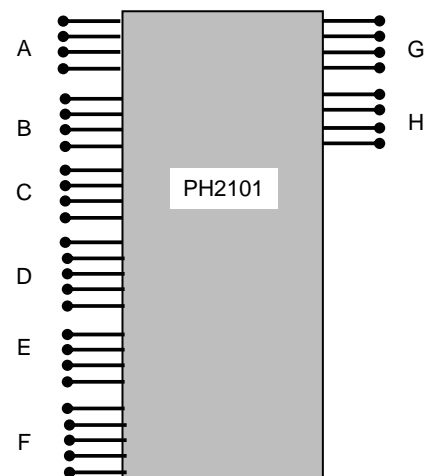
Check each point of power IC as shown below.



Check point

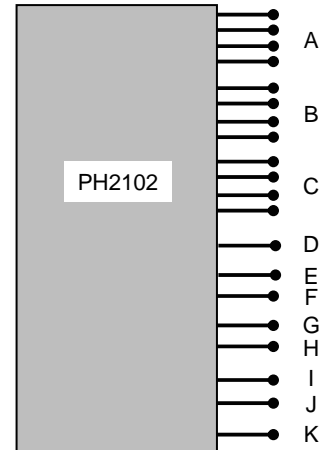
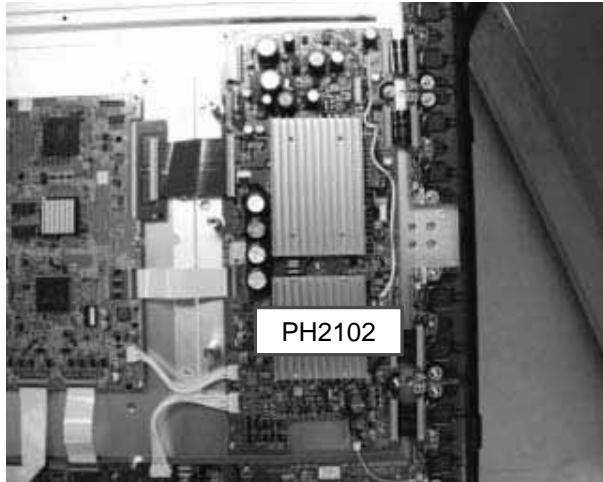
Between
A - G
B - H
C - D
E - F

OK: Over $1k\Omega$
NG: Short



4.3 PH2102 on the SCAN PWB

Check each point of power IC as shown below.



Check point

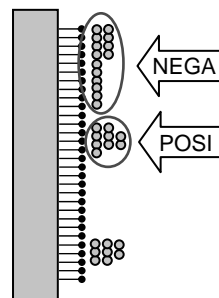
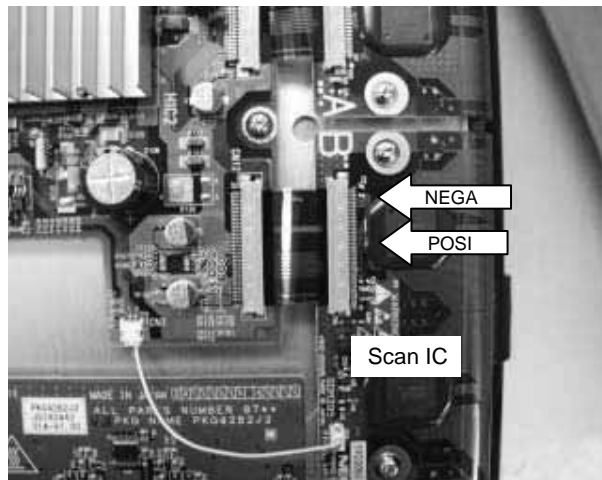
Between A - B	Between F - G
B - C	H - I
D - E	J - K

OK: Over 1k Ω
NG: Short

5. INSPECTION OF SCAN IC DRIVERS

According to the following procedures, measure with a circuit tester and check OK or NG.

Scan IC drivers [A-D]



Check point

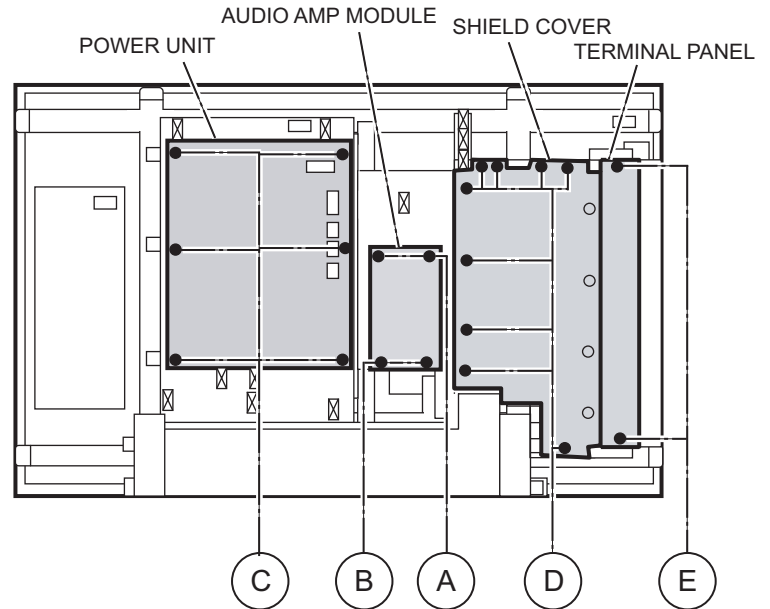
Between NEGA - POSI

OK: Over 1k Ω
NG: Short

■ DISASSEMBLY PROCEDURE

[DISPLAY BLOCK]

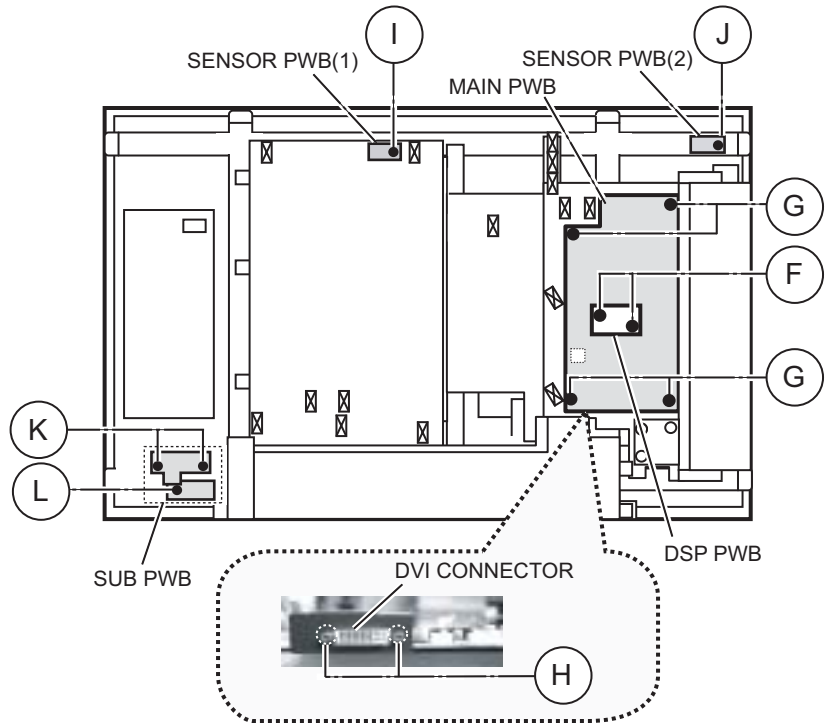
1. Removing the AUDIO AMP MODULE
 - (1) Remove the 2 screws [A].
 - (2) Remove the 2 screws [B].
 - (3) Remove the AUDIO AMP MODULE.
2. Removing the POWER UNIT
 - (1) Remove the 6 screws [C].
 - (2) Remove the POWER UNIT.
3. Removing the SHIELD COVER
 - (1) Remove the 9 screws [D].
 - (2) Remove the SHIELD COVER.
4. Removing the TERMINAL PANEL
 - (1) Remove the 2 screws [E].
 - (2) Remove the TERMINAL PANEL.



5. Removing the DSP PWB
 - (1) Remove the 2 screws [F].
 - (2) Remove the DSP PWB.
6. Removing the MAIN PWB
 - Remove the SHIELD COVER.
 - Remove the TERMINAL PANEL.
 - (1) Remove the 4 screws [G].
 - (2) Remove the 2 screws [H].
 - (3) Remove the MAIN PWB.
7. Removing the SENSOR PWB(1)
 - (1) Remove the 1 screw [I].
 - (2) Remove the SENSOR PWB(1).
8. Removing the SENSOR PWB(2)
 - (1) Remove the 1 screw [J].
 - (2) Remove the SENSOR PWB(2).

NOTE : SENSOR PWB(1) and SENSOR PWB (2) are included in MAIN PWB.

9. Removing the SUB PWB
 - (1) Remove the 2 screws [K].
 - (2) Remove the 1 screws [L].
 - (3) Remove the SUB PWB.

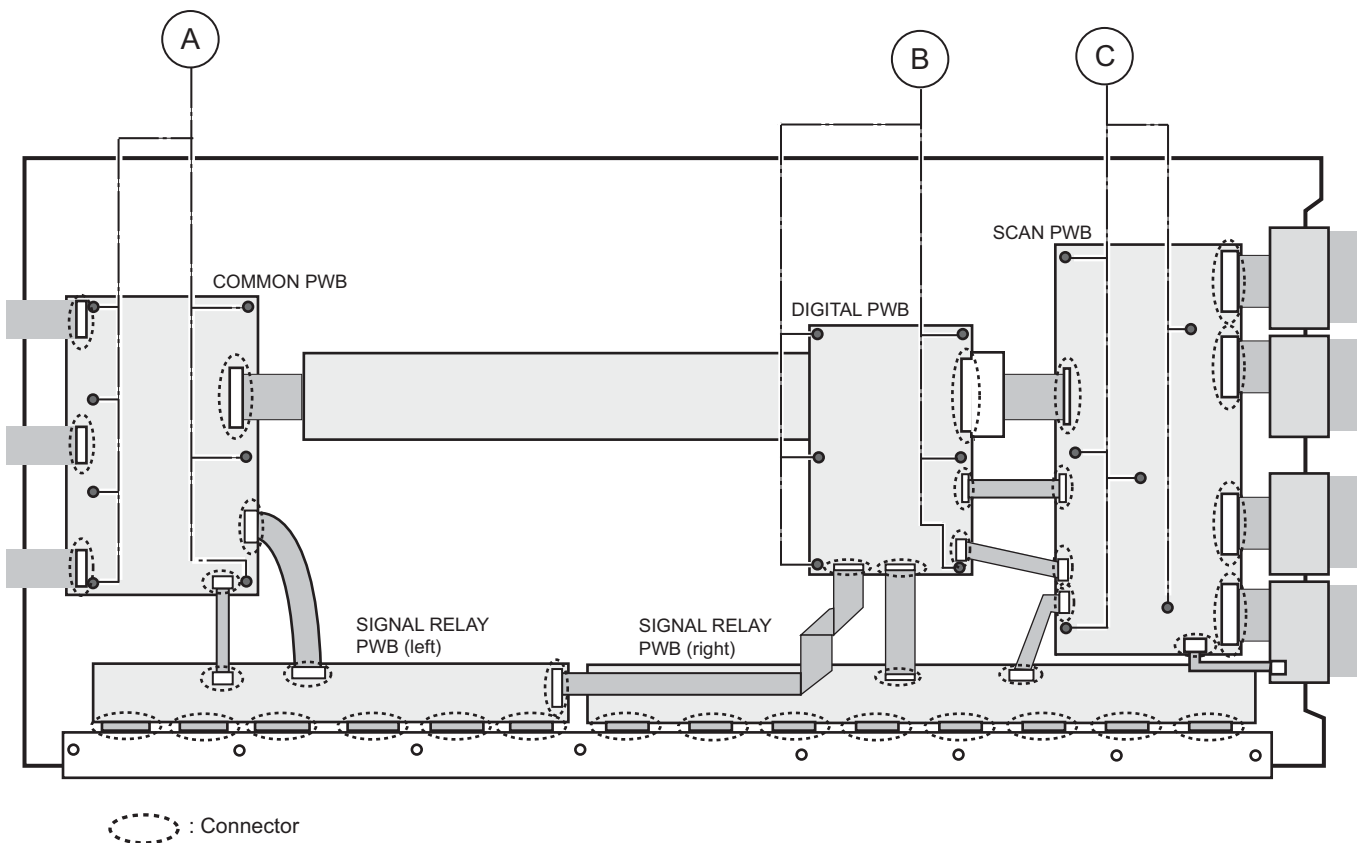


Notes : Check the state of the detached cables and connectors.

- (1) Check any dirt or peeling in the contact part of the flat cable, and any crack, crease, disconnection and short-circuit of wires.
- (2) Check any foreign substance in the connector's contact .
- (3) Check the state of plugging the flat cable into the r, and confirm it locks completely.

[PDP(PANEL) BLOCK]

1. Removing the COMMON PWB
 - (1) Detach the 6 connectors.
 - (2) Remove the 7 screws [A].
 - (3) Remove the COMMON PWB.
2. Removing the DIGITAL PWB
 - (1) Detach the 5 connectors.
 - (2) Remove the 6 screws [B].
 - (3) Remove the DIGITAL PWB.
3. Removing the SCAN PWB
 - (1) Detach the 9 connectors.
 - (2) Remove the 6 screws [C].
 - (3) Remove the SCAN PWB.
4. Removing the SIGNAL RELAY PWB (left)
 - (1) Detach the 9 connectors.
 - (2) Remove the SIGNAL RELAY PWB (left).
5. Removing the SIGNAL RELAY PWB (right)
 - (1) Detach the 10 connectors.
 - (2) Remove the SIGNAL RELAY PWB (right).



Notes : Check the state of the detached cables and connectors.

- (1) Check any dirt or peeling in the contact part of the flat cable, and any crack, crease, disconnection and short-circuit of wires.
- (2) Check any foreign substance in the connector's contact .
- (3) Check the state of plugging the flat cable into the connector, and confirm it locks completely.

■ CONFIRMING REFERENCE VOLTAGE

Each PDP panel has the characteristic voltage value.
In the adjustment after fix or exchange of a PW board,
this voltage value is used as reference.
You can get it from the vendor's web site on the Internet.

1. Getting the characteristic voltage value of the PDP unit

1.1 Access the following address by the Web browser of your PC.

<http://203.126.119.92/necpd/>

1.2 After [NEC-ITLS] screen is displayed, click "Click here to log on to NPD". (Fig. 1)

1.3 Type the following user name and password into the dialog box and click "Enter" button. (Fig. 2)

Username: JVCJPN01

Password: jvckoseki (lower-case)

1.4 After [WELCOME TO NEC-ITLS] is displayed (Fig. 3), click the "Voltage" icon in the "Enquiry" holder on the upper left part of the window. (Fig. 4)

1.5 After [VOLTAGE ENQUIRY] is displayed (Fig. 5), enter the panel ID number, which is shown on the panel (refer to page 2), into the dialog box and click "GO".

1.6 Then, the characteristic voltage value will be displayed. (Fig. 6)

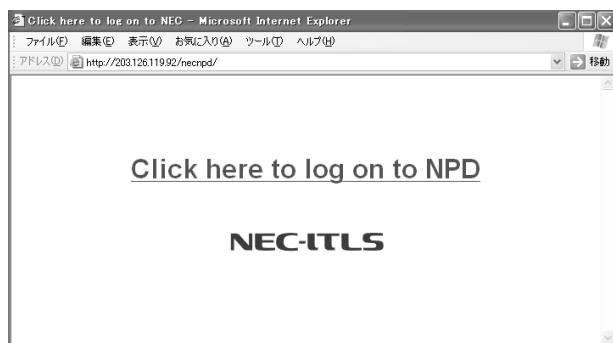


Fig. 1

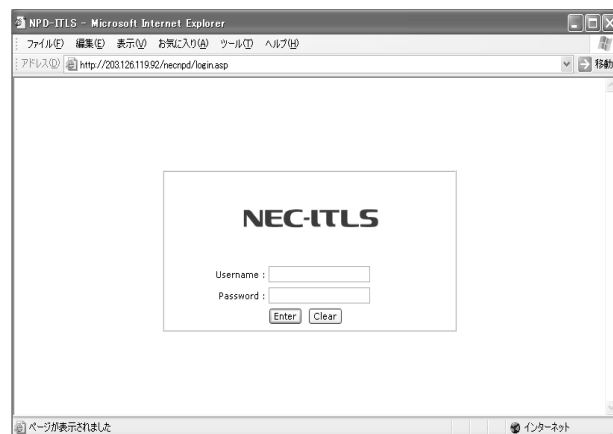


Fig. 2

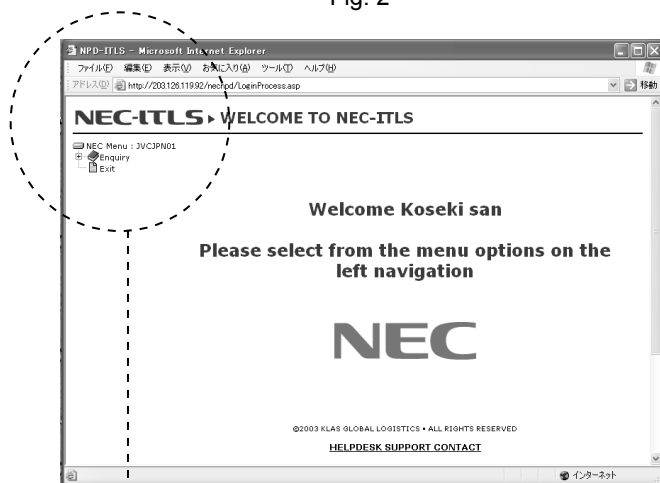


Fig. 3



Fig. 4

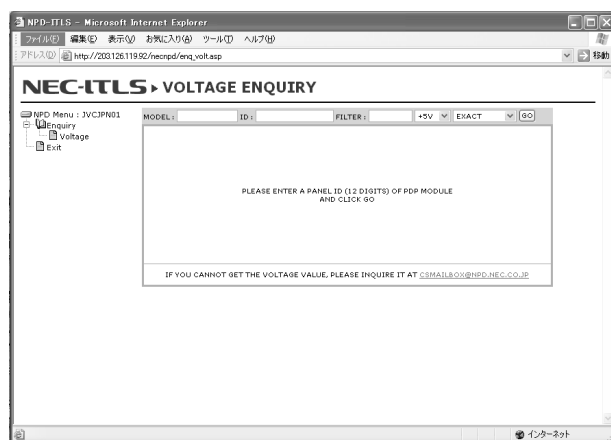


Fig. 5

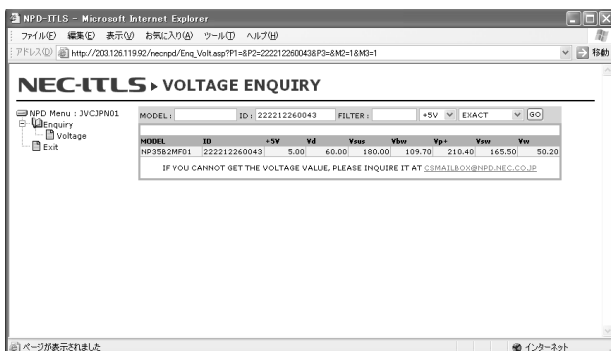
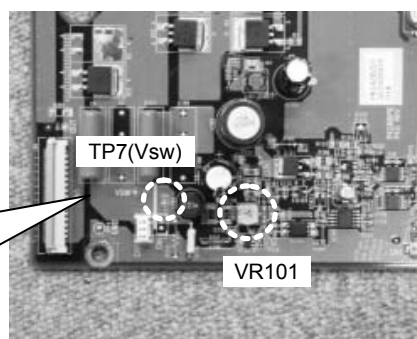
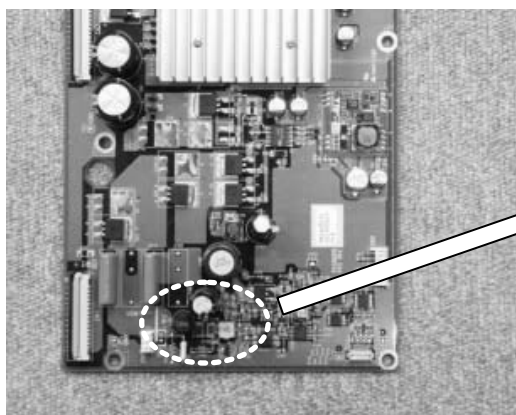


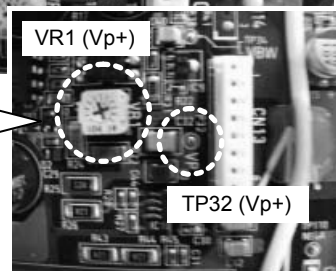
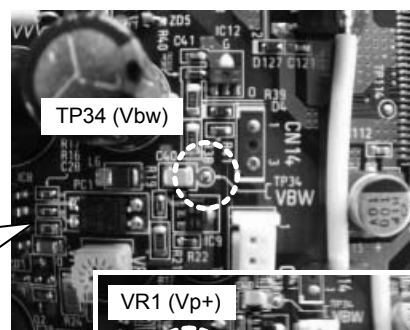
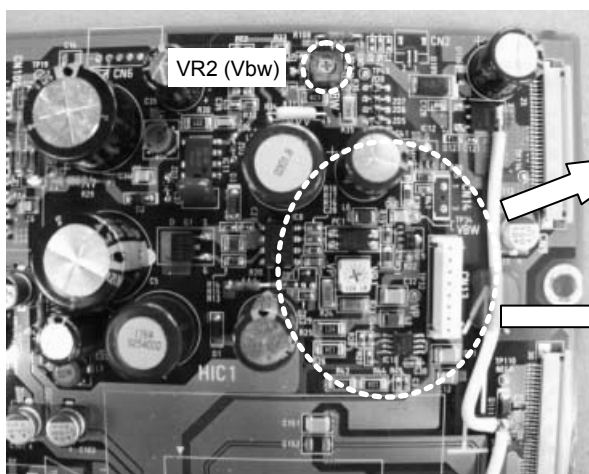
Fig. 6

■ADJUSTMENTS

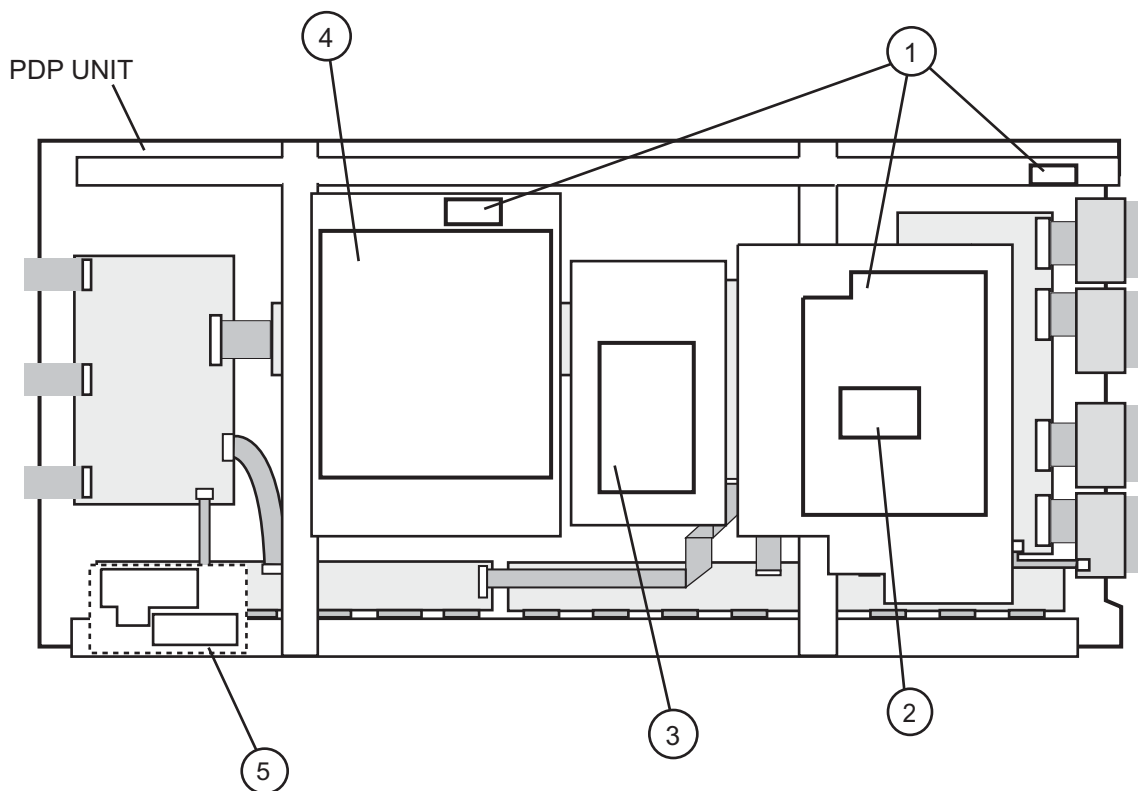
Item	Measuring instrument	Test point	Adjustment part	Description
Vsw VOLTAGE ADJUSTMENT	DC voltmeter	TP7 GND [COMMON PWB]	VR101 [COMMON PWB]	(1) Measure the voltage between TP7 and GND on the COMMON PWB. (2) Adjust the voltage same as the reference data of Vsw shown in web site by VR101. ※The adjustment accuracy is within $\pm 0.5V$.



Vbw / Vp+ VOLTAGE ADJUSTMENT	DC voltmeter	TP32 (Vp+) TP34 (Vbw) GND [SCAN PWB]	VR1 (Vp+) VR2 (Vbw) [SCAN PWB]	(1) Measure the voltage between TP34 and GND on the SCAN PWB. (2) Adjust the voltage same as the reference data of Vbw shown in web site by VR2. ※The adjustment accuracy is within $\pm 0.5V$. (3) Measure the voltage between TP32 and GND on the SCAN PWB. (4) Adjust the voltage same as the reference data of Vp+ shown in web site by VR1. ※The adjustment accuracy is within $\pm 1.5V$.
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■ **PARTS LIST** [DISPLAY BLOCK]



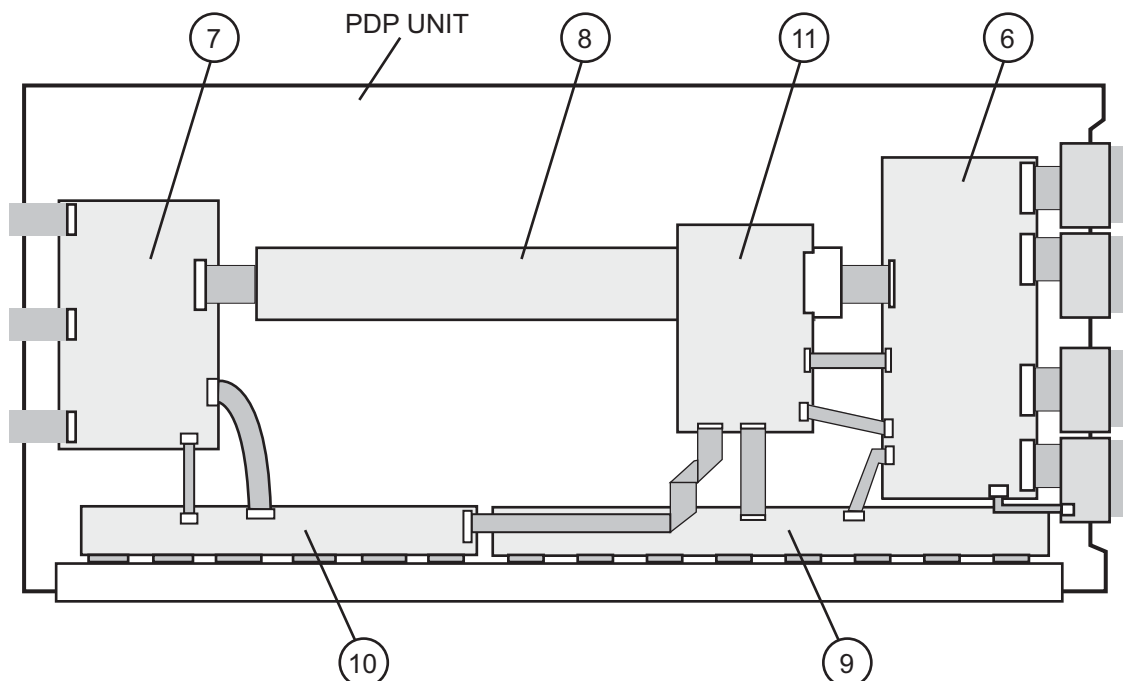
⚠	Ref No.	Parts No.	Parts name	Description
⚠	1	N-093-6K-6M01	MAIN PWB	
⚠	2	N-093-6G-5D01	DSP PWB	
⚠	3	N-03S-13-0231	AUDIO AMP MODULE	
⚠	4	N-03S-11-0034	POWER UNIT	
⚠	5	N-093-6K-6S91	SUB PWB	

NOTES AT THE TIME OF PW BOARD EXCHANGE

It will become the cause of failure if dust adheres to the inside of a connector, or a flat wire and a point-of-contact part.

When the PW board is exchanged, be careful of the dust and dirt of the inside of a connector, or a flat wire and a point-of-contact part enough.

[PDP(PANEL) UNIT]



△	Ref No.	Parts No.	Parts name	Latest version	Compatible version
△	6	NE-9S899447	SCAN PWB	01K	
△	7	NE-9S899448	COMMON PWB	01G	
△	8	NE-9S899592	RECOVERY RELAY PWB	02B	
△	9	NE-9S899037	SIGNAL RELAY PWB	01A	(right)
△	10	NE-9S899036	SIGNAL RELAY PWB	01A	(left)
△	11	NE-9S899033	DIGITAL PWB	02A-14	01A-05, 01A-11
		NE-9S899034		02A-15	01A-06, 01A-12
		NE-9S899035		02A-16	01A-07, 01A-13

NOTE : Version is indicated by the seal stuck on each PW board.



The written example of
the seal on a PWB

NOTES AT THE TIME OF PW BOARD EXCHANGE

It will become the cause of failure if dust adheres to the inside of a connector, or a flat wire and a point-of-contact part.

When the PW board is exchanged, be careful of the dust and dirt of the inside of a connector, or a flat wire and a point-of-contact part enough.

JVC

Victor Company of Japan, Limited

AV & MULTIMEDIA COMPANY VIDEO DISPLAY CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.51955B)



Printed in Japan
WPC

JVC

SCHEMATIC DIAGRAMS

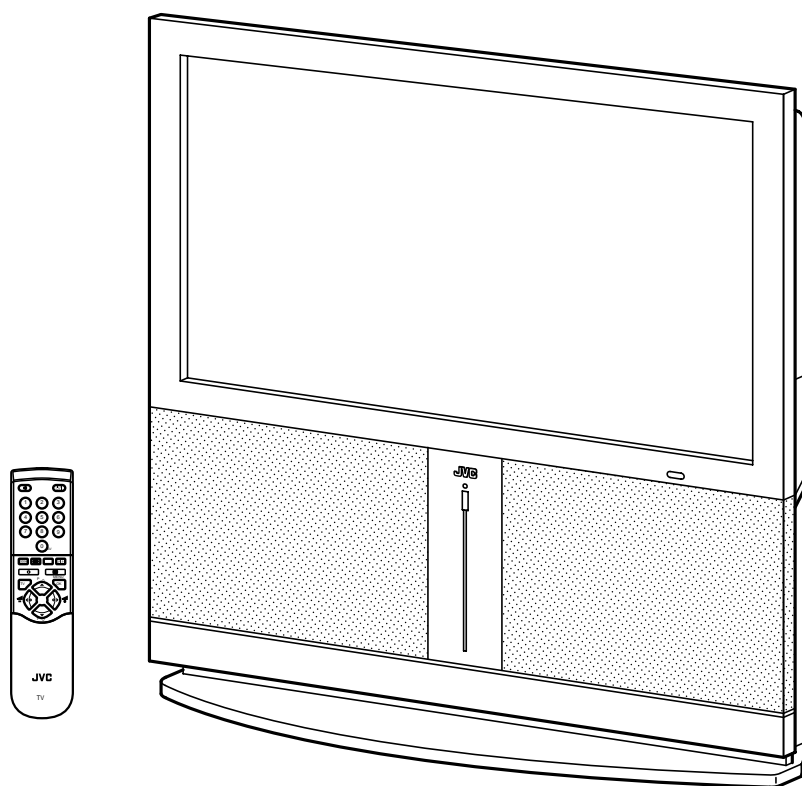
PLASMA WIDE TELEVISION

AV42PD20ES

BASIC CHASSIS

MF

CD-ROM No.SML200204



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■ SEMICONDUCTOR SHAPES	2-2
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AV42PD20ES

STANDARD CIRCUIT DIAGRAM

1.SAFETY

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

(5) Voltage values : All DC voltage values

● In the PW board :R1209 → R209

(1) Resistors

- Resistance value

No unit	: [Ω]
K	: [K Ω]
M	: [M Ω]

- Rated allowable power

No indication	:1/ 16 [W]
Others	:As specified

- Type

No indication	:Carbon resistor
OMR	:Oxide metal film resistor
MFR	:Metal film resistor
MPR	:Metal plate resistor
UNFR	:Uninflamable resistor
FR	:Fusible resistor

* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

- Capacitance value

1 or higher	: [pF]
less than 1	: [μ F]

- Withstand voltage

No indication	:DC50[V]
Others	:DC withstand voltage [V]
AC indicated	:AC withstand voltage [V]

* Electrolytic Capacitors

47/50[Example]:Capacitance value [μF]/withstand voltage[V]

- Type

No indication	:Ceramic capacitor
MM	:Metalized mylar capacitor
PP	:Polypropylene capacitor
MPP	:Metalized polypropylene capacitor
MF	:Metalized film capacitor
TF	:Thin film capacitor
BP	:Bipolar electrolytic capacitor
TAN	:Tantalum capacitor



(3) Coils


No unit	: [μH]
Others	: As specified

(4)Test point





 :Test point
 :Only test point display

(5)Connecting method

 :Connector
  :Wrapping or soldering

 :Receptacle

(6)Ground symbol

 :LIVE side ground
 :ISOLATED(NEUTRAL) side ground
 :EARTH ground
 :DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏏) side GND. Therefore, care must be taken for the following points.

- (1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

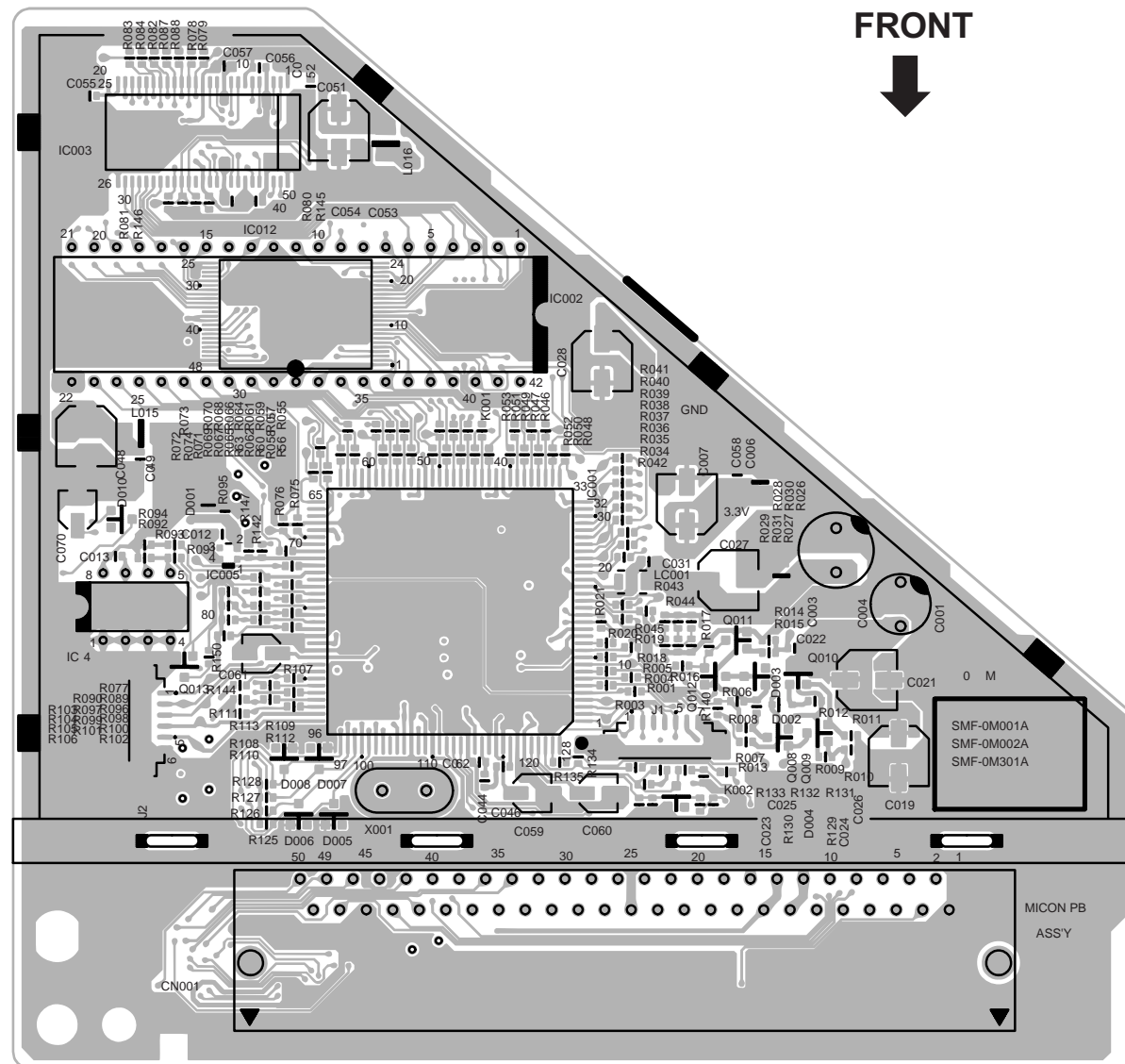
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

NOTE

- ◇ Due improvement in performance, some part numbers shown in the circuit diagram may not agree with those indicated in the part list.

When ordering parts, please use the numbers that appear in the Parts List.

- ◇ This model (AV42PD20ES) consists of a MONITOR and a RECEIVER. However, the MONITOR and RECEIVER cannot be activated separately. Trying the separate activation of the MONITOR or RECEIVER may cause a trouble. Always try to activate the MONITOR and RECEIVER as a unit during a service repair.









CONTENTS

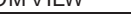




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SEMICONDUCTOR SHAPES

TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					<p>CHIP TR</p> 

IC

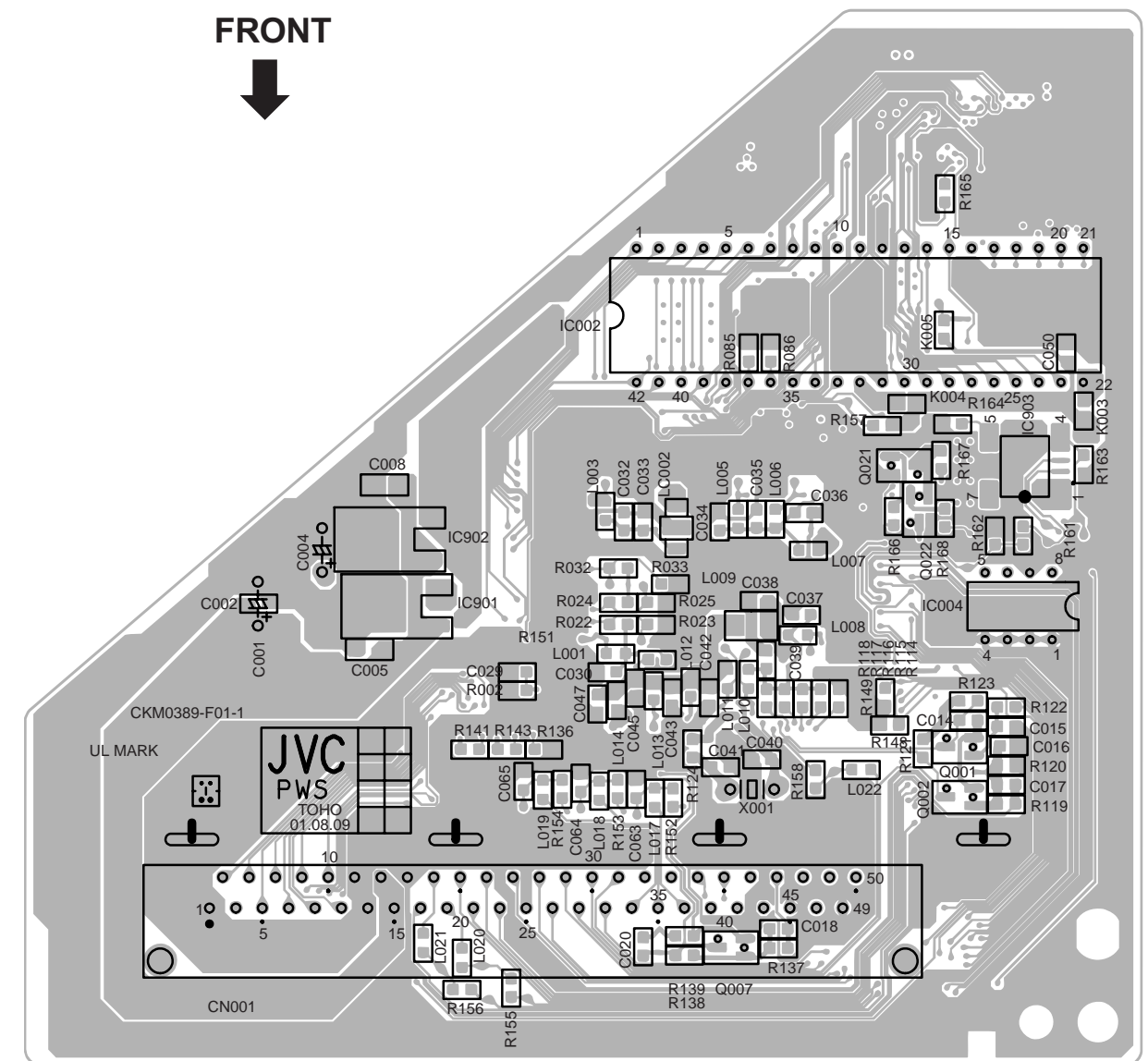
BOTTOM VIEW		FRONT VIEW		TOP VIEW
				

CHIP IC

QUESTION 1		
TOP VIEW		

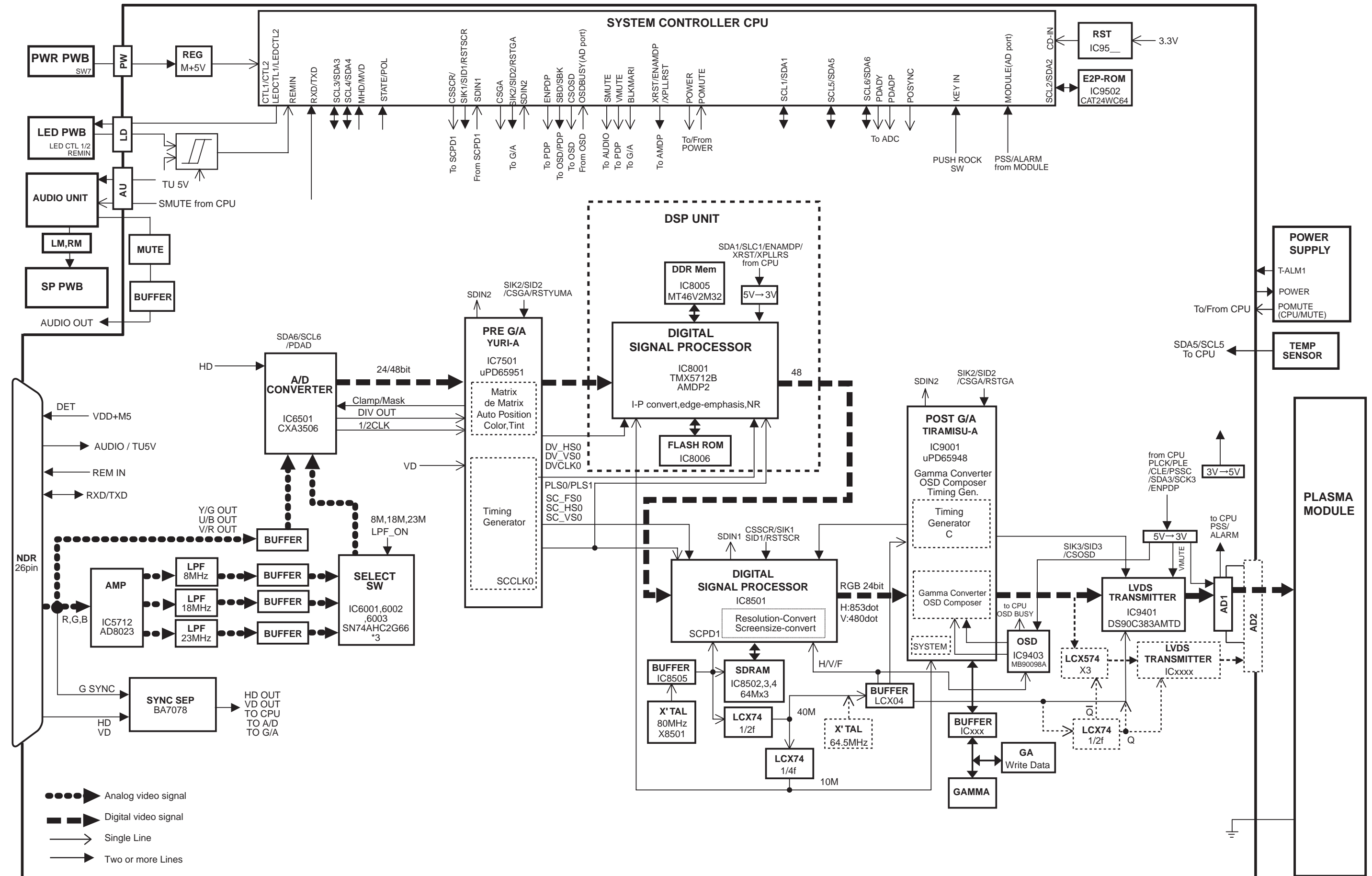
MICOM PWB PATTERN

(SOLDER SIDE)

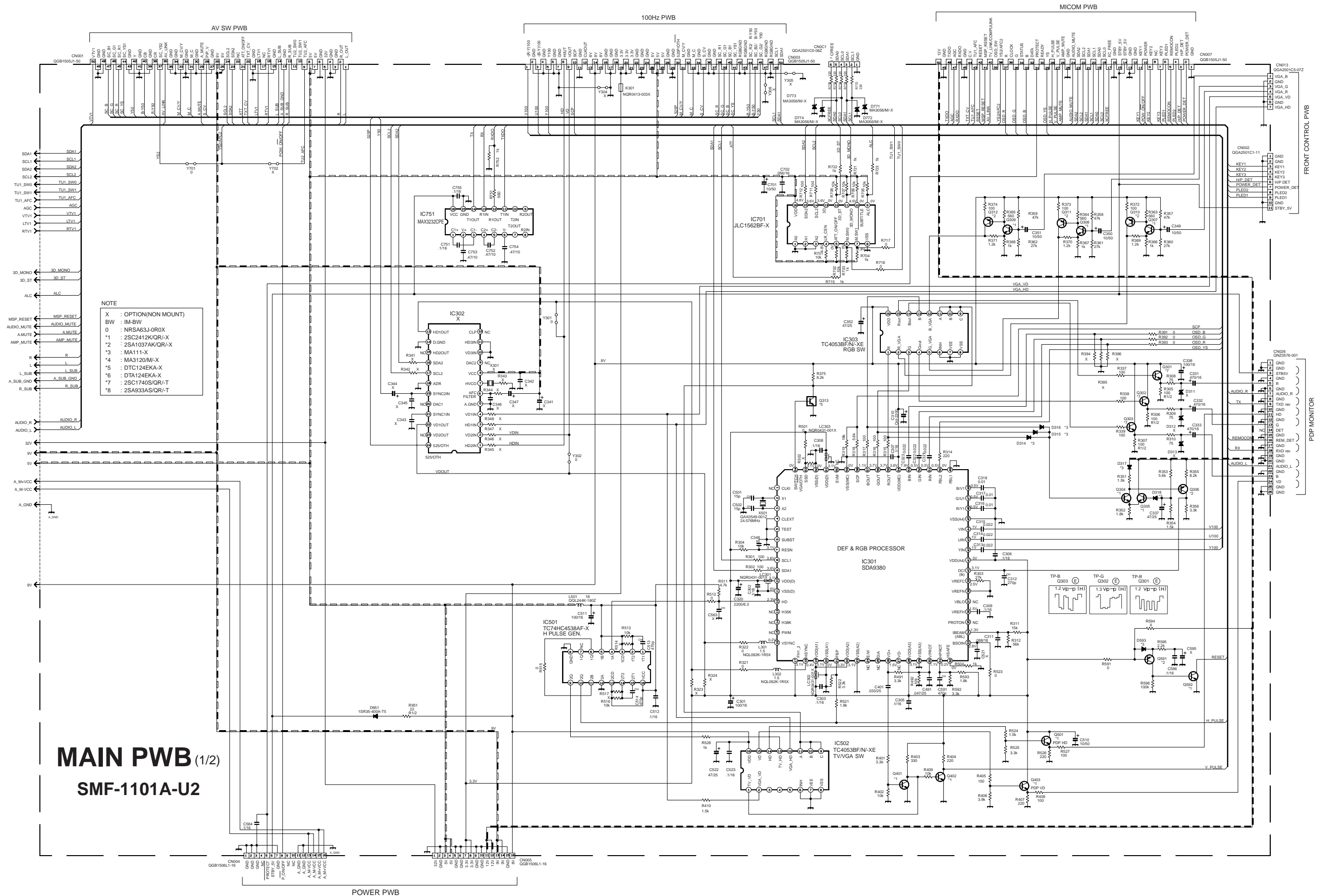


No.51955

BLOCK DIAGRAM (PDP MONITOR) [2/2]

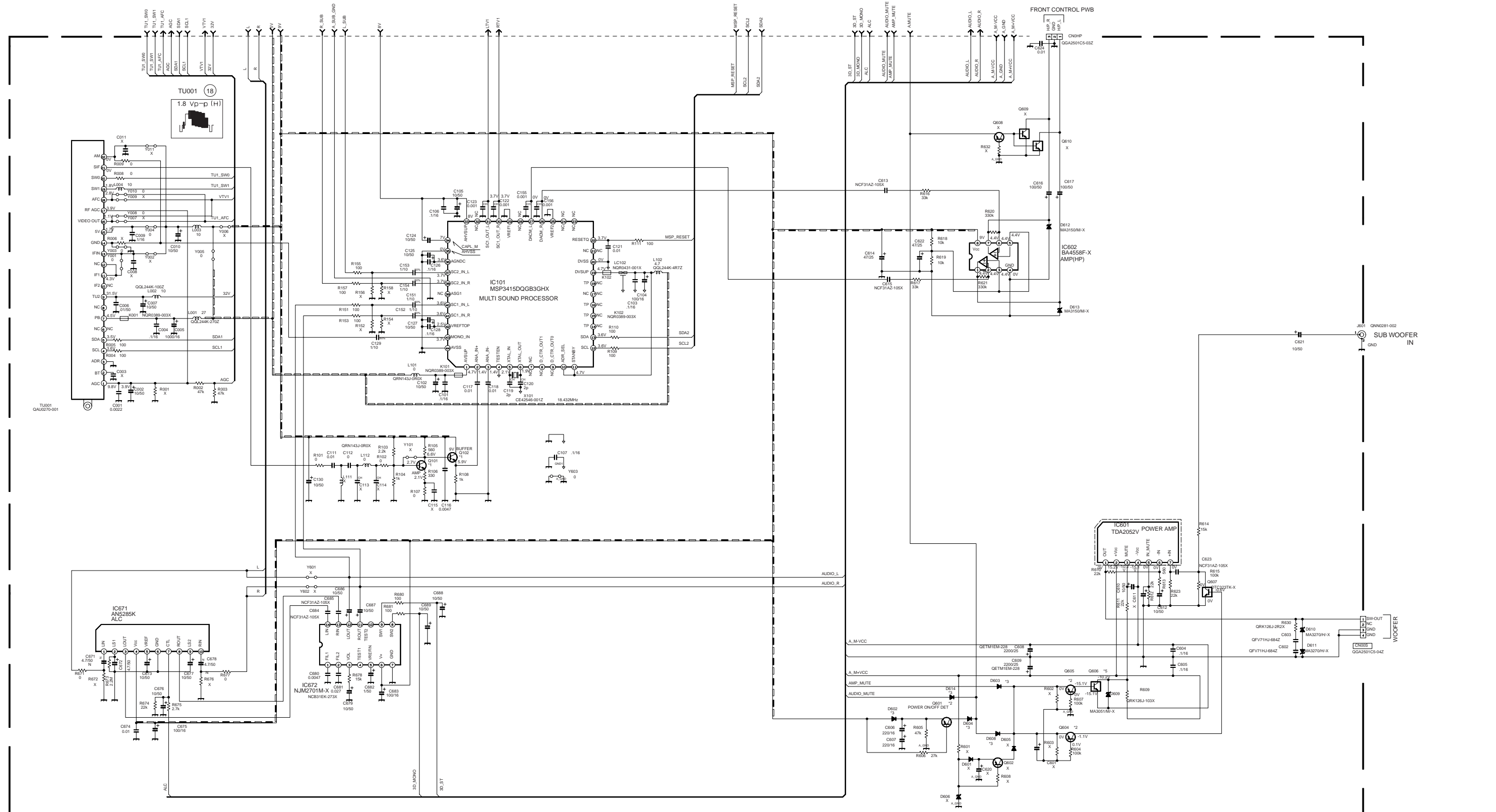


CIRCUIT DIAGRAMS MAIN PWB CIRCUIT DIAGRAMS [1/2]



MAIN PWB (1/2)
SMF-1101A-U2

MAIN PWB CIRCUIT DIAGRAM [2/2]

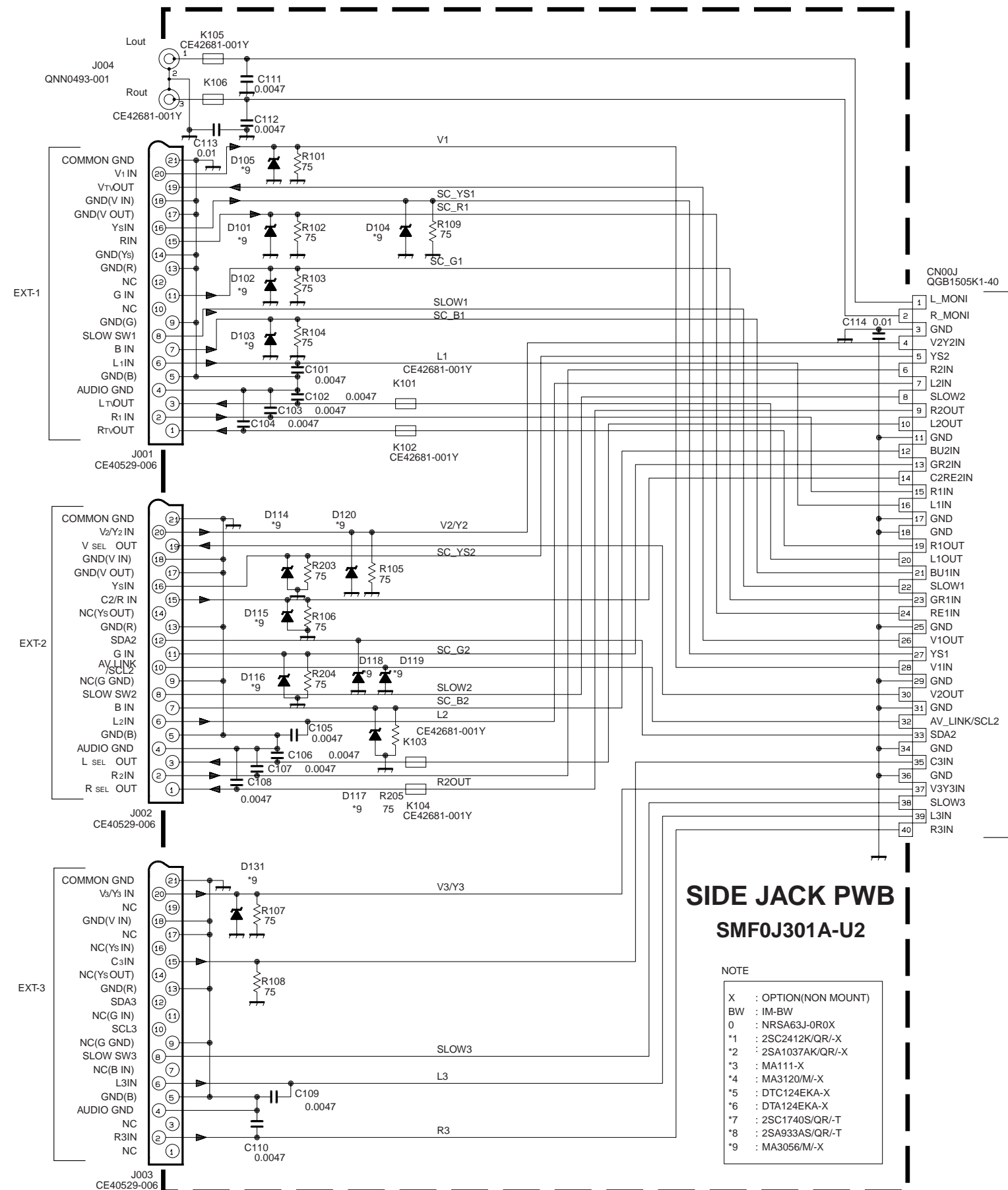


MAIN PWB (2/2)
SMF-1101A-U2

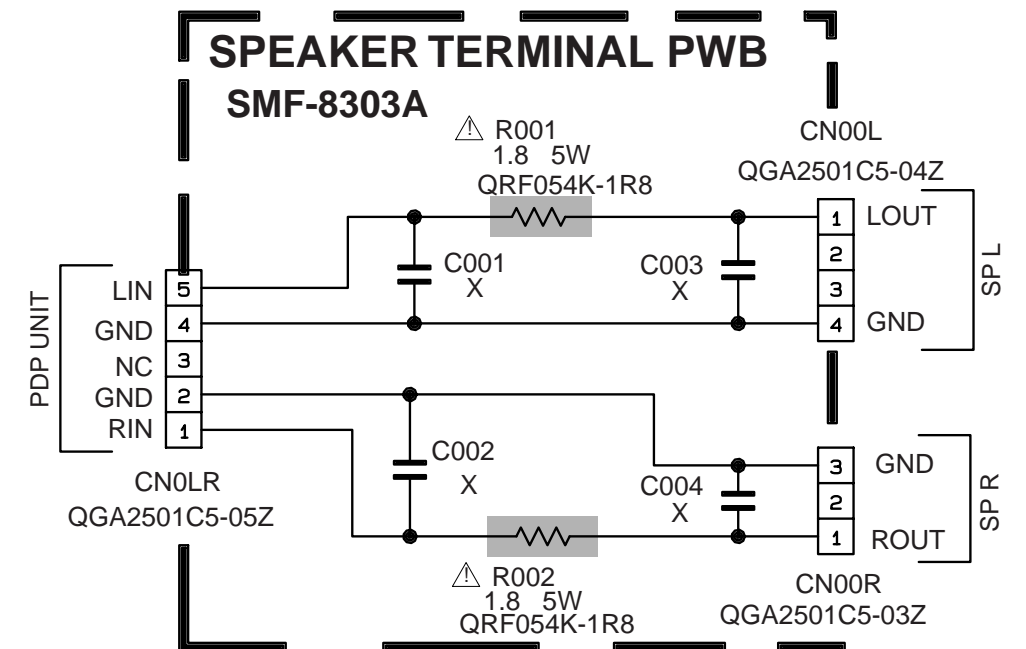
NOTE

X	: OPTION(NON MOUNT)
BW	: IM-BW
0	: NRS5A63J-0R0X
*1	: 2SC2412K/QR/-X
*2	: 2SA1037AK/QR/-X
*3	: MA111-X
*4	: MA3120M/-X
*5	: DTC124EKA-X
*6	: DTA124EKA-X
*7	: 2SC1740S/QR/-T
*8	: 2SA933AS/QR/-T

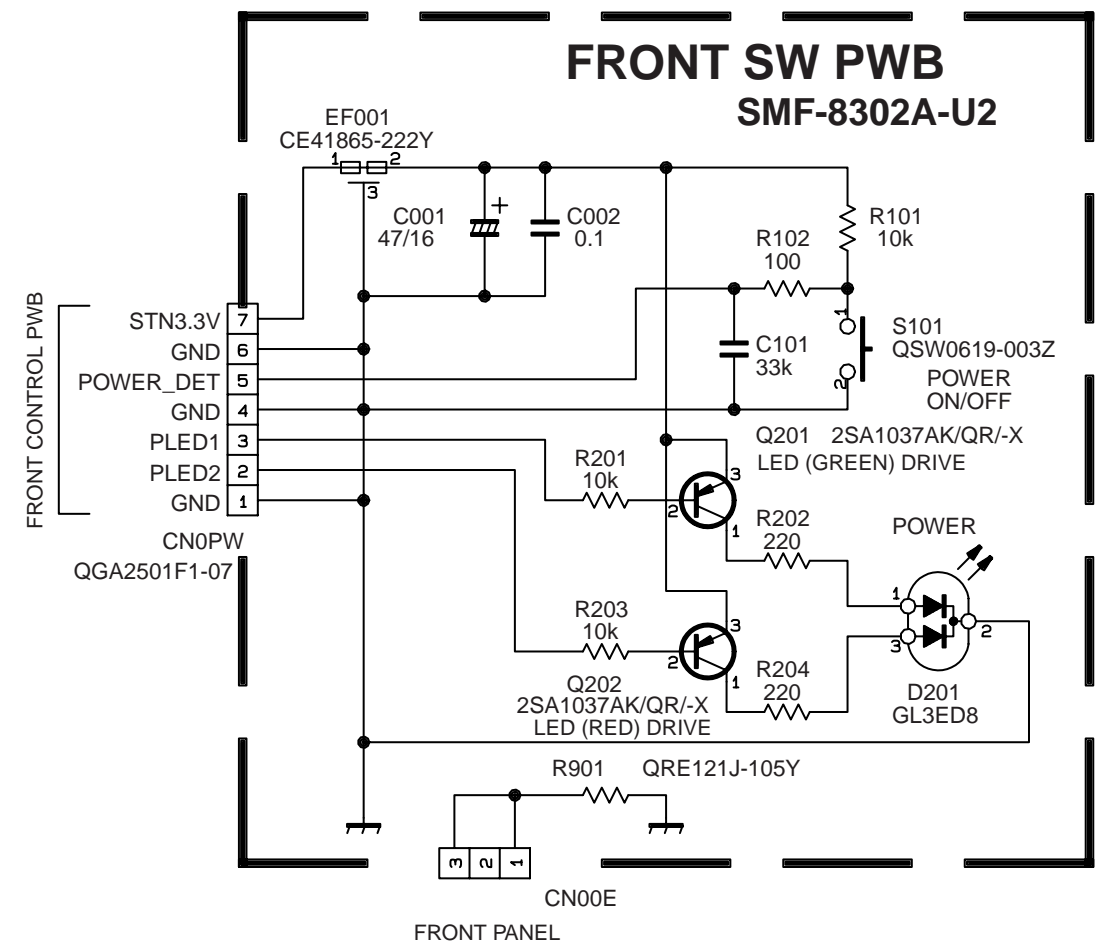
SIDE JACK PWB CIRCUIT DIAGRAM



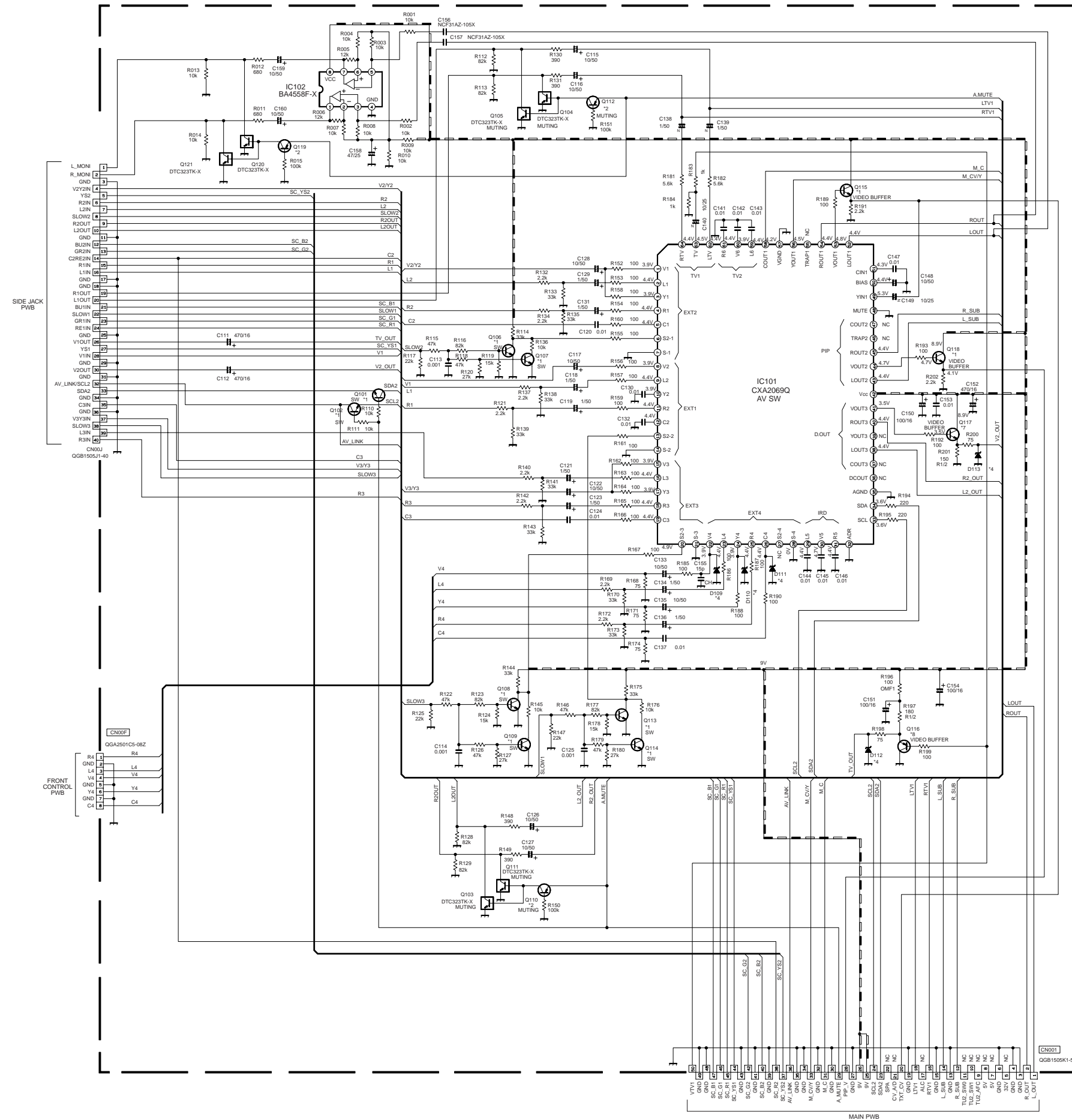
SPEAKER TERMINAL PWB CIRCUIT DIAGRAM



FRONT SW PWB CIRCUIT DIAGRAM



AV SW PWB CIRCUIT DIAGRAM



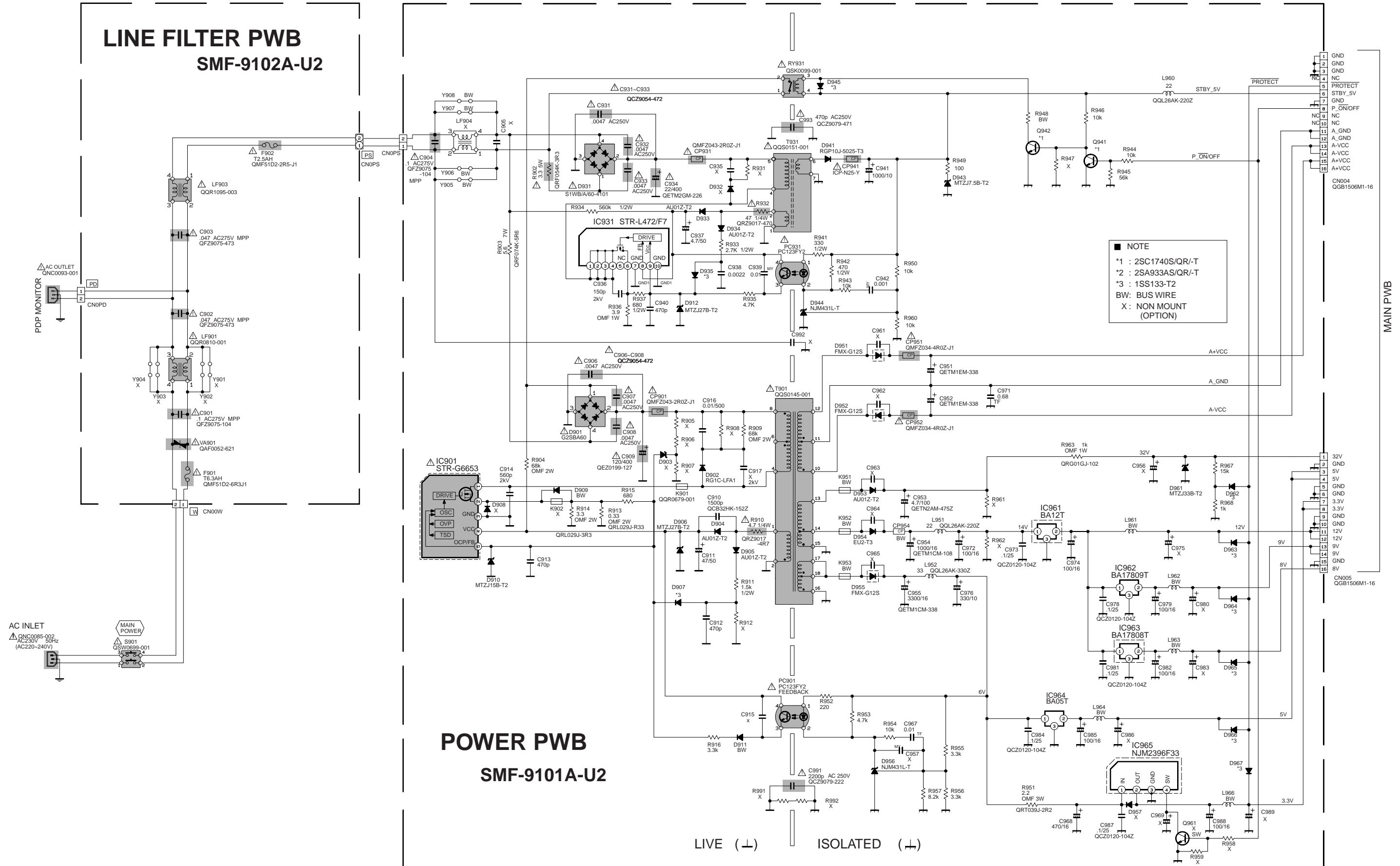
AV SW PWB

SMF0S301A-U2

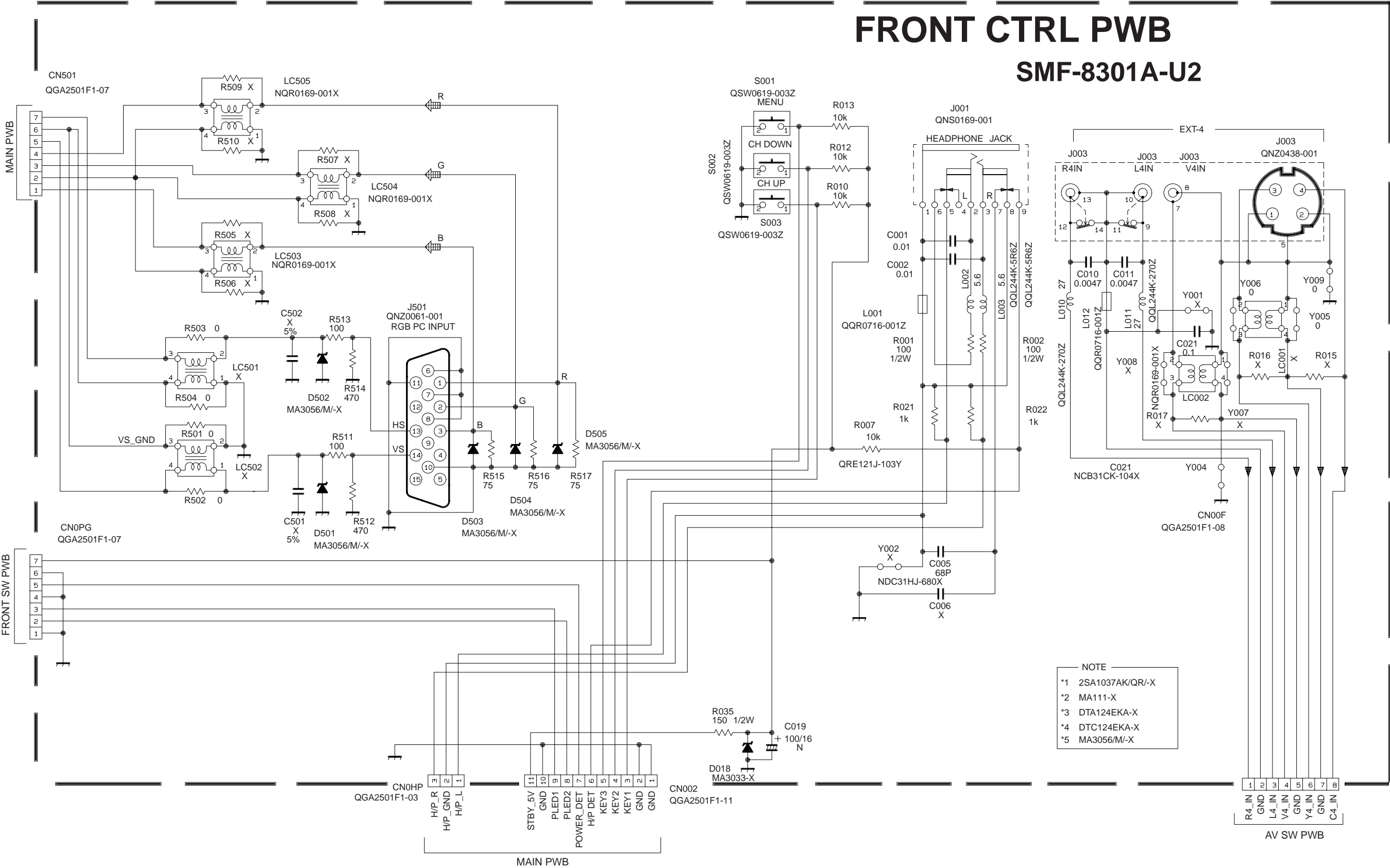
NOTE

- X : OPTION(NON MOUNT)
- BW : IM-BW
- 0 : NRS463J-GR0X
- *1 : 2SC2412K/QR-X
- *2 : 2SA1037AK/QR-X
- *3 : MA111-X
- *4 : MA3120/M-X
- *5 : DTC124KA-X
- *6 : DTA124KA-X
- *7 : 2SC1740S/QR-T
- *8 : 2SA933AS/QR-T
- *9 : MA3056/M-X

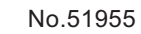
LINE FILTER & POWER PWB CIRCUIT DIAGRAM



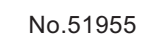
FRONT CONTROL PWB CIRCUIT DIAGRAM



100Hz PWB
SMF0Z301A-U2

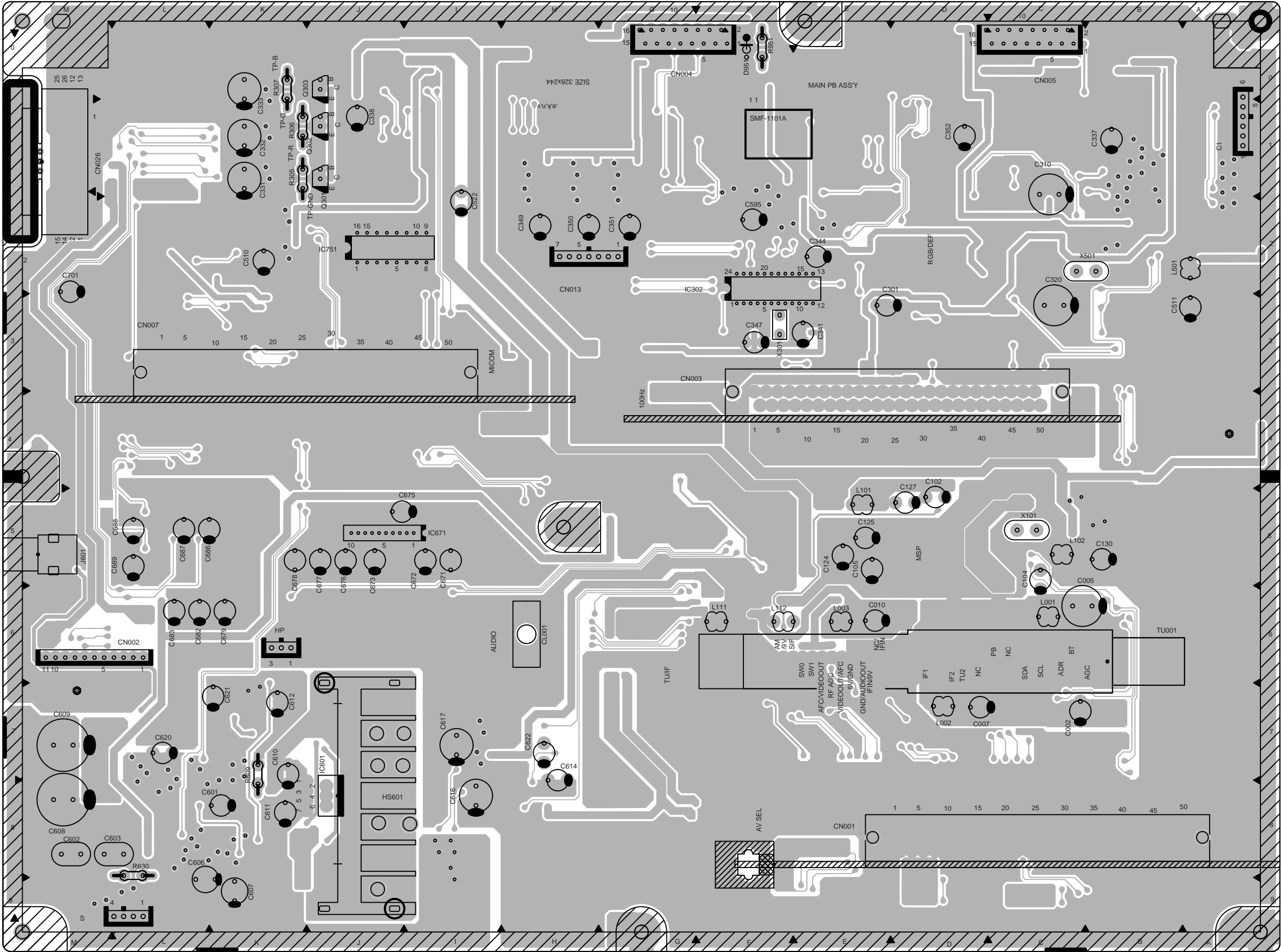


MICOM PWB
SMF0M301A-U2



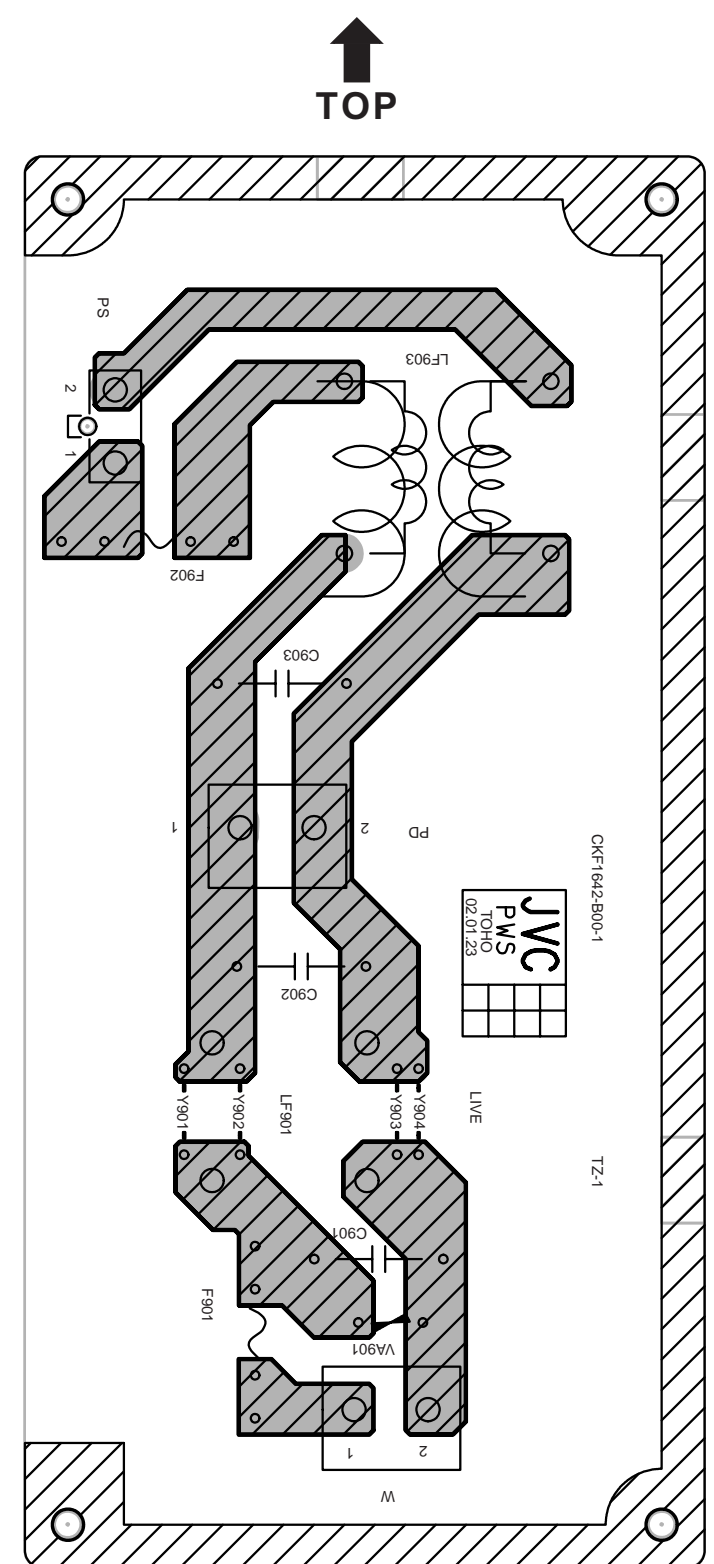
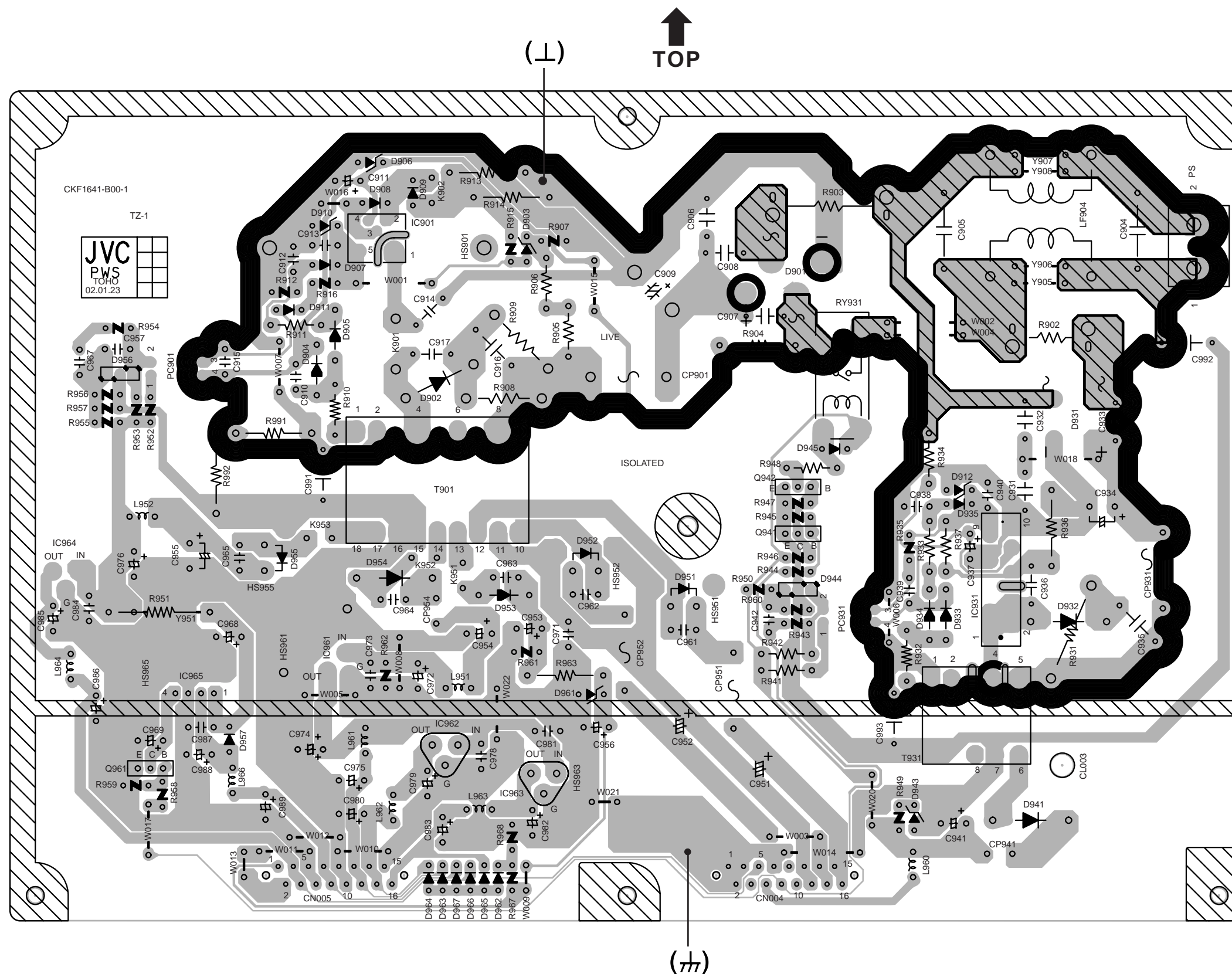
MAIN PWB PATTERN (PARTS SIDE)

↑
TOP



POWER PWB PATTERN

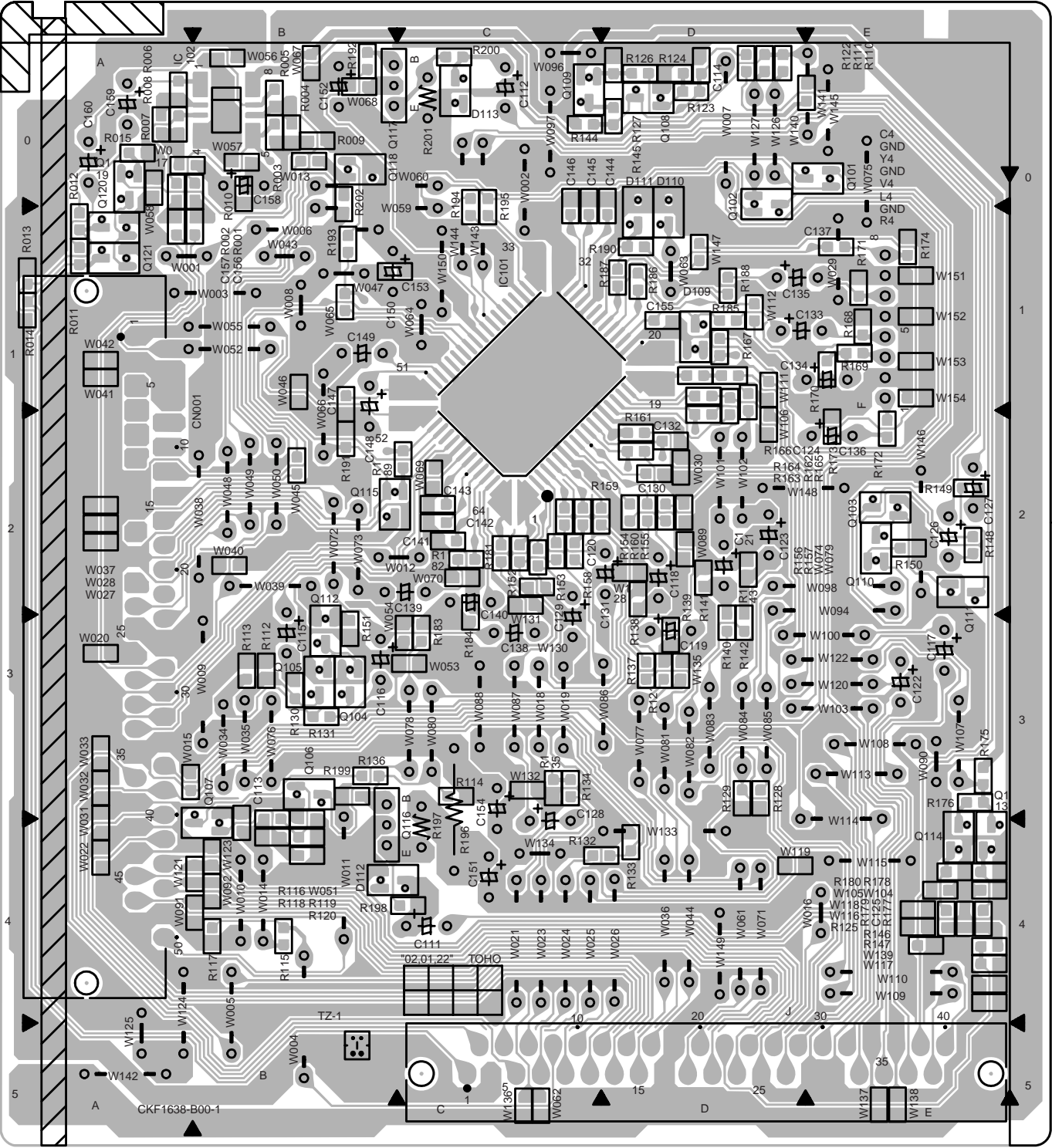
LINE FILTER PWB PATTERN



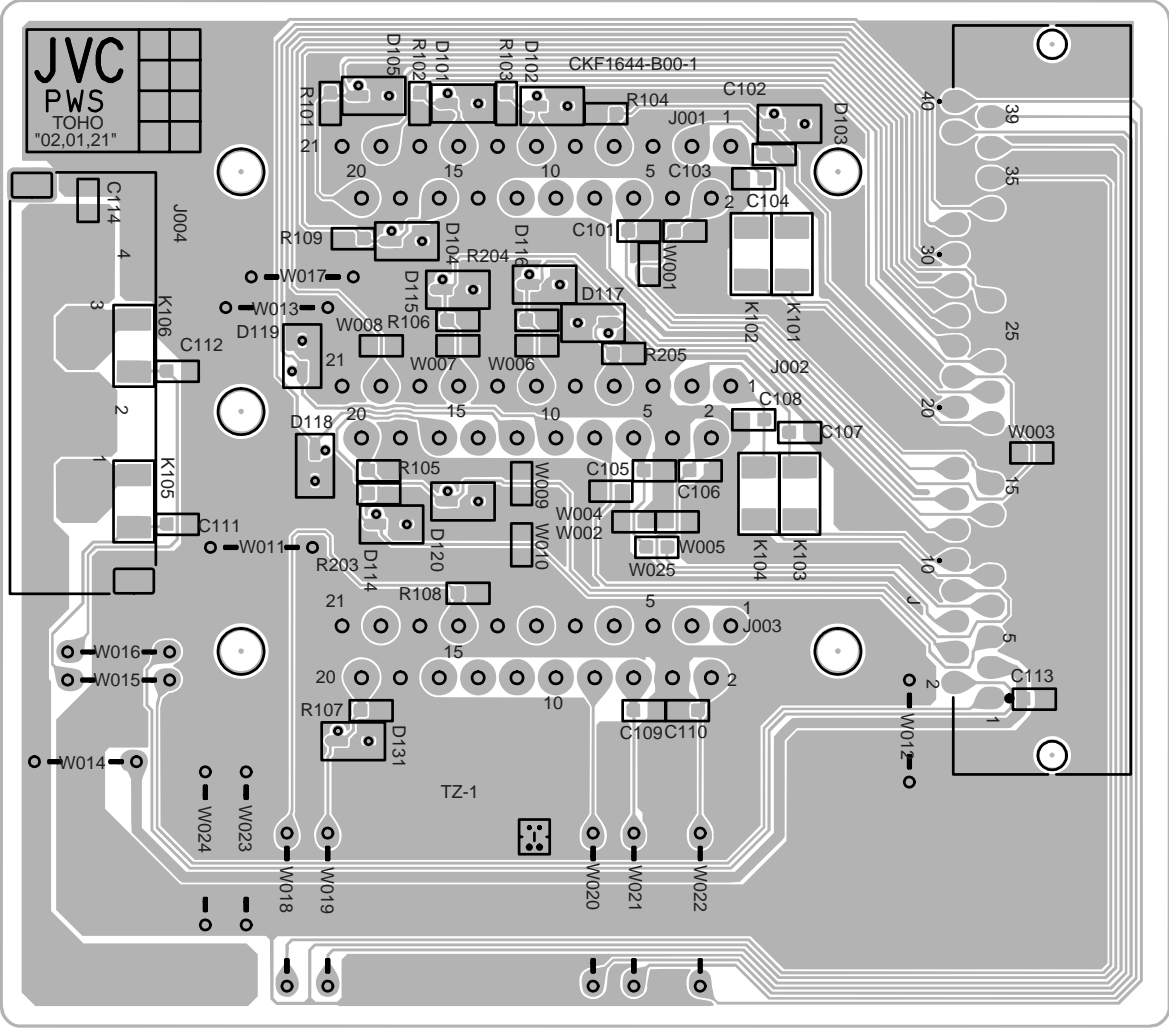
AV SW PWB PATTERN

SIDE JACK PWB PATTERN

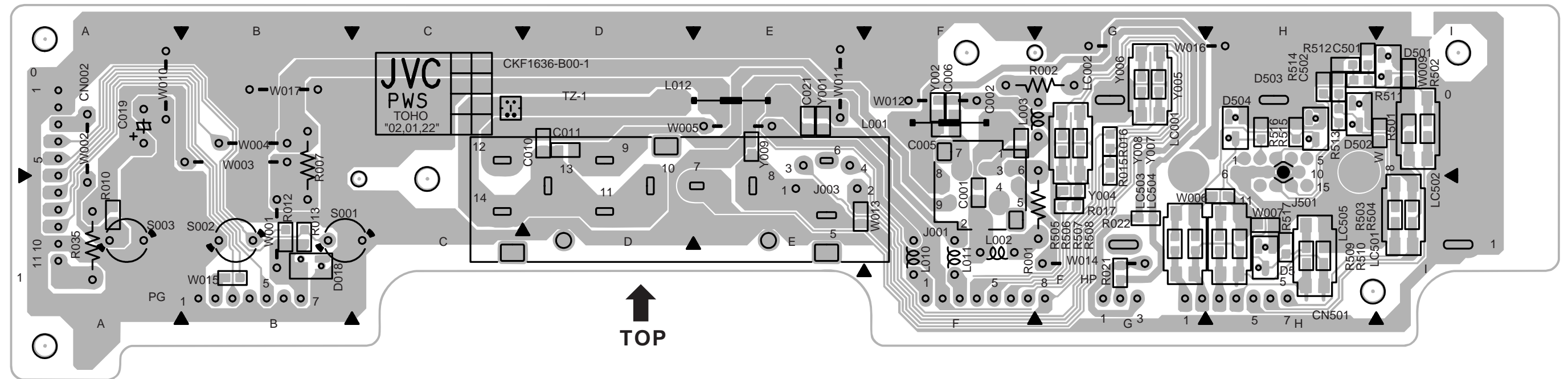
← FRONT



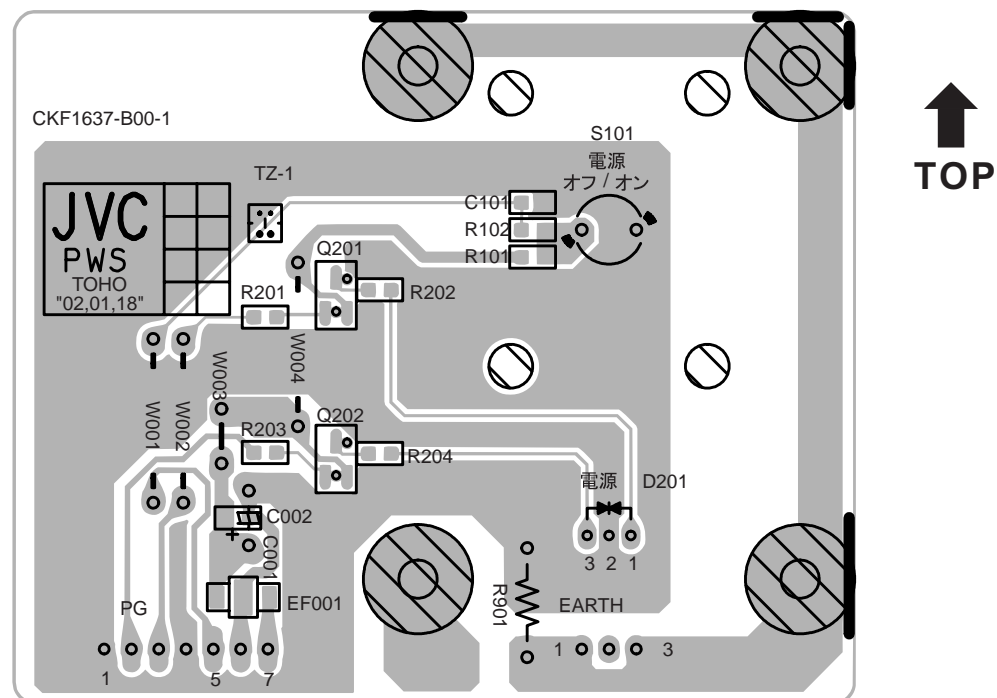
← TOP



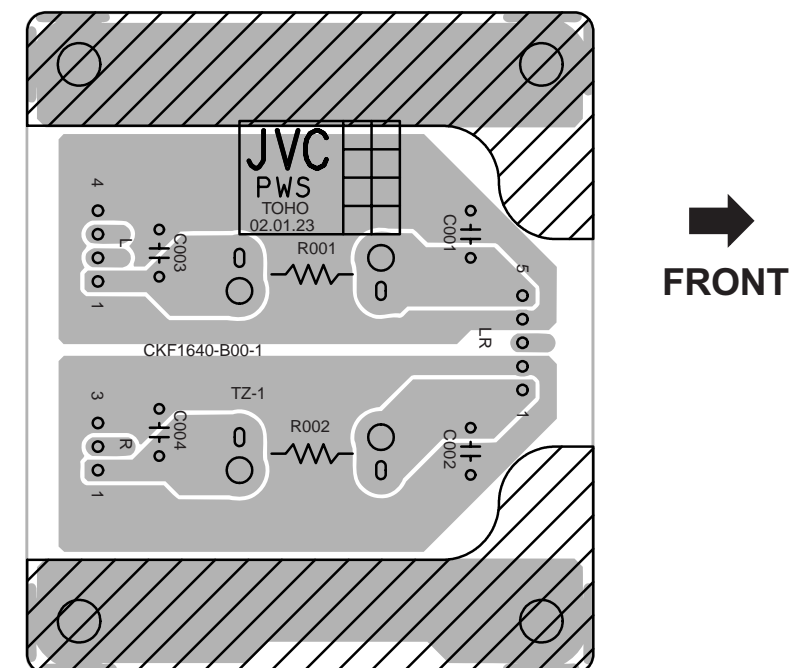
FRONT CONTROL PWB PATTERN



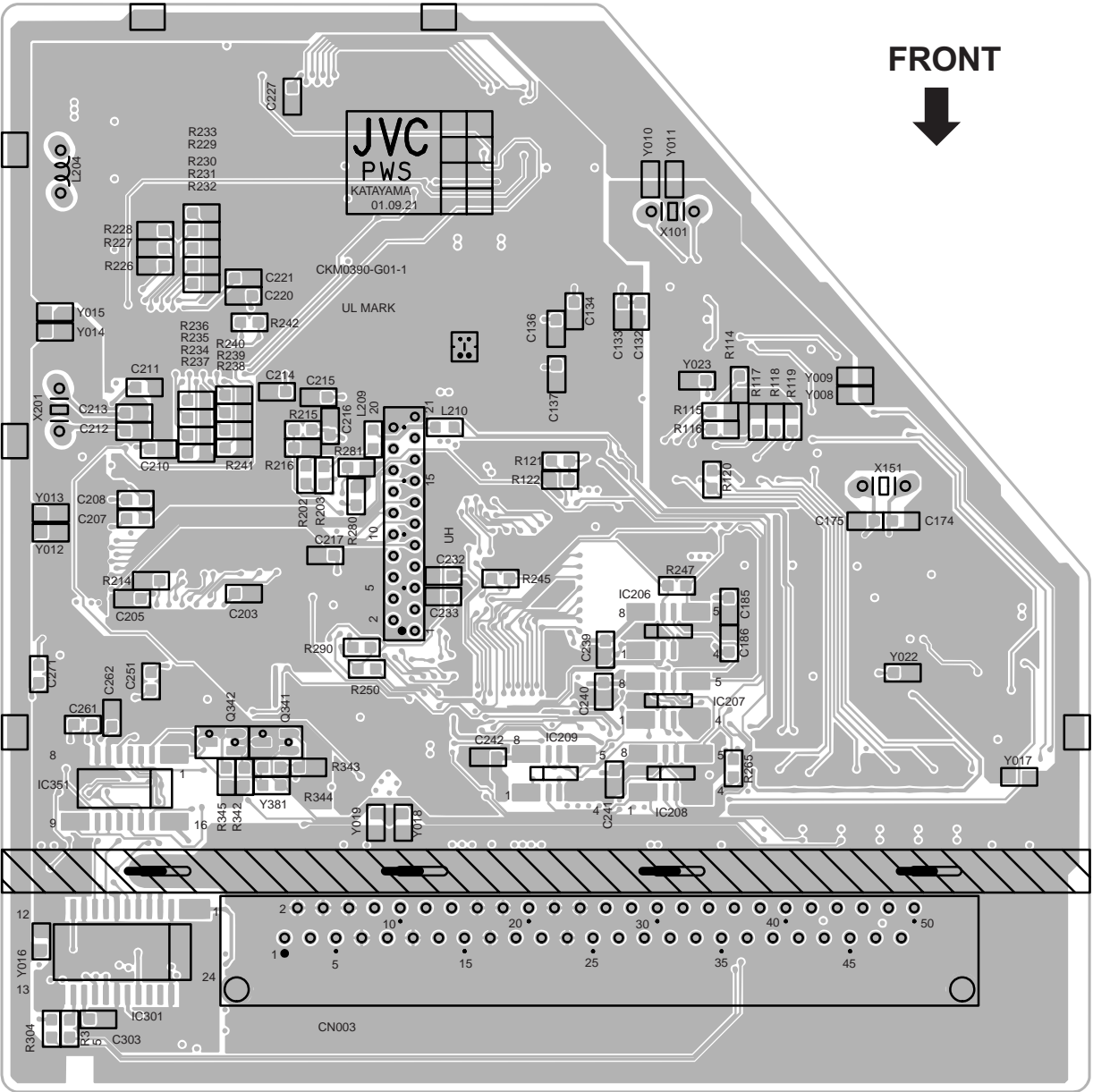
FRONT SW PWB PATTERN



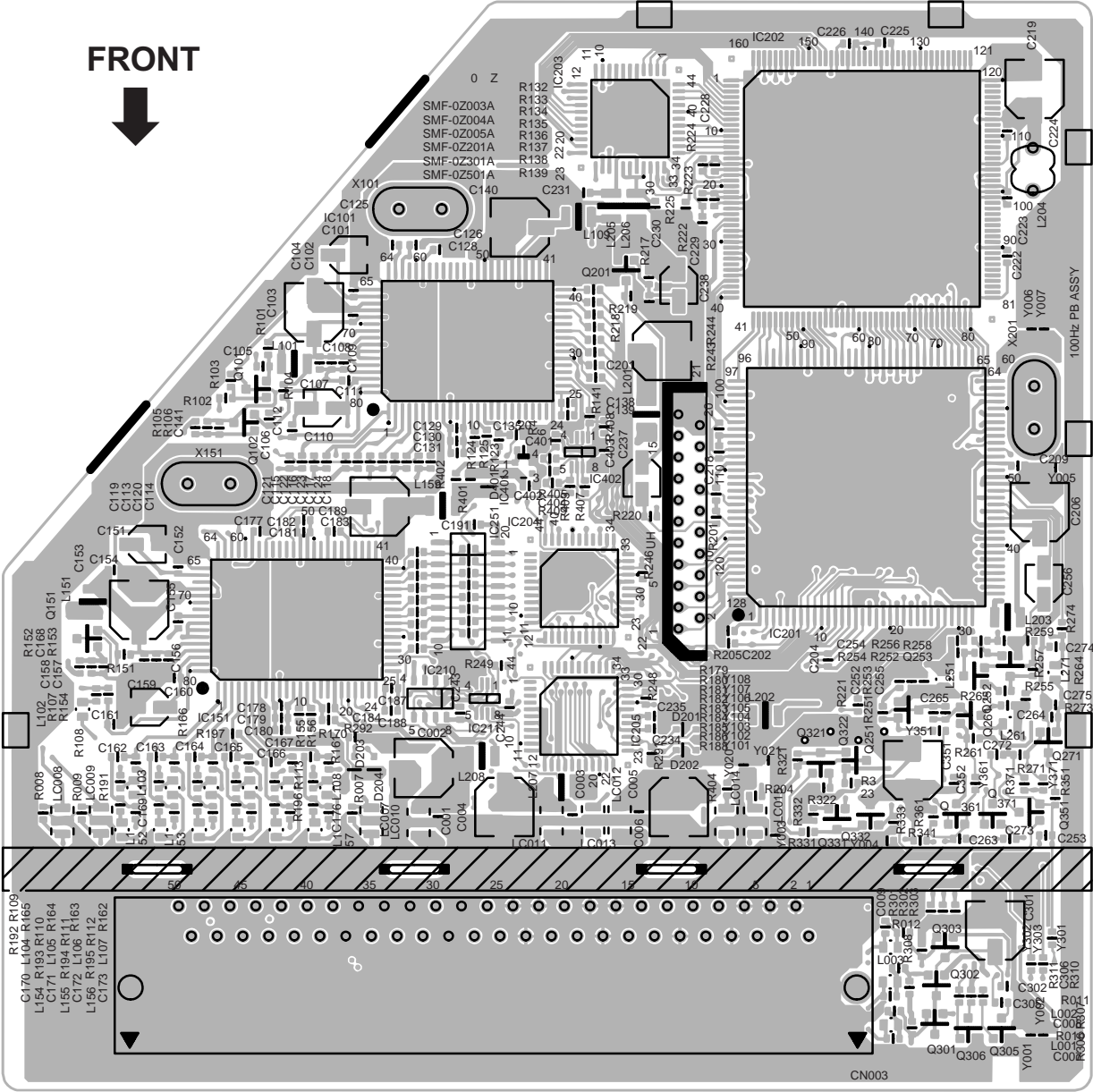
SPEAKER TERMINAL PWB PATTERN



100Hz PWB PATTERN
(SOLDER SIDE)



(PARTS SIDE)





VICTOR COMPANY OF JAPAN, LIMITED

HOME AV NETWORK BUSINESS UNIT. 12, 3-chome, Moriya-cho, Kanagawa-ku, Yokohama, Kanagawa-prefecture, 221-8528, Japan



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DP6060



JVC

ENGLISH
DEUTSCH
FRANÇAIS
NEDERLANDS
CASTELLANO
ITALIANO
PORTUGUÊS



AV42PD20ES

COLOUR TELEVISION

INSTRUCTIONS

FARBFERNSEHGERÄT
TELEVISEUR COULEUR
KLEURENTELEVISIE
TELEVISOR A COLOR
TELEVISORE A COLORI
TELEVISOR A CORES

BEDIENUNGSANLEITUNG
MANUEL D'INSTRUCTIONS
GEBRUIKSAANWIJZING
MANUAL DE INSTRUCCIONES
ISTRUZIONI
INSTRUÇÕES

Interí Art
T-V LINK



*plain English
approved*
by the word centre

■ Warning

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adaptor or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If a new mains plug has to be fitted, then follow the instruction given below:

Important

Do not make any connection to the larger terminal which is marked with the letter E or by the safety earth symbol \perp or coloured green or green-and-yellow.

The wires in the mains lead on this product are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As these colours may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

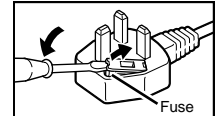
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.

■ If in doubt — consult a competent electrician.

How to replace the fuse

Open the fuse compartment with a blade screwdriver, and replace the fuse.



■ Guidelines for safe operation

This equipment has been designed and manufactured to comply with international safety standards. However, as with any electrical appliance, care must be taken to ensure optimal results and operational safety.

- Before attempting to use this equipment, read the operating instructions thoroughly.
- Ensure that all electrical connections (including the mains plug, extension leads, etc.) have been made in accordance with the manufacturer's instructions.
- If ever in doubt about the installation, operation or safety of this equipment, consult your dealer.
- Handle all glass panels or covers with care.
- Never operate this equipment if it appears damaged or operates abnormally. Turn the power off, disconnect the main power plug and consult your dealer.
- Never remove any affixed panels or covers. Doing so may result in electrical shock.
- Never leave this equipment operating unattended unless otherwise specifically stated that it is designed to do so or in standby mode. Only use the designated power switch to turn off the power and ensure that all potential users are instructed how to do so. Make special arrangements for infirm or handicapped persons.
- Never watch TV while operating a motor vehicle. It is illegal to watch TV while driving.
- Never listen to headphones at high volume. Doing so may damage your hearing.
- Never obstruct the ventilation of this equipment. Doing so may cause overheating and result in a malfunction or damage.
- Never use makeshift stands or attempt to affix legs with wood screws. When using a manufacturer's approved stand or legs, use only the fixtures provided and follow the installation instructions.
- Never allow this equipment to be exposed to rain or moisture.
- Never allow anyone, especially children, to insert anything into an opening in the case. Doing so may result in a fatal electrical shock.
- Never guess or take chances with electrical equipment of any kind. It is better to be safe than sorry.

Thank you for buying this JVC colour television.

To make sure you understand how to use your new TV, please read this manual thoroughly before you begin.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

WARNING

Always use the power cords which are supplied with the TV.

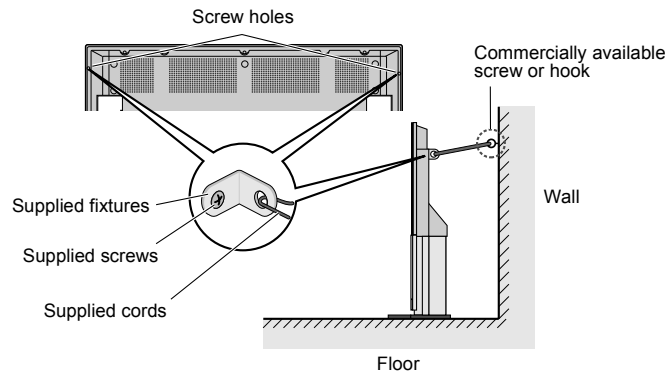
Two power cords are supplied with this TV. Use the power cord which best suits the area in which you live, and insert it into a correctly earthed outlet.

Failure to use the supplied power cord or to insert it into a correctly earthed outlet may result in electric shocks.

WARNING

The flat design of this TV means that it is more likely to fall over than an ordinary TV. When installing this TV, ensure that the measures for preventing the TV from falling over are taken as shown below.

If the measures for preventing the TV from falling over are not taken, in the case of an earthquake or shocks, the TV may fall over and break or cause injuries.



Use the supplied fixtures, screws and cords as well as commercially available screws or hooks to carry out the measures to prevent the TV from falling over.

Use the supplied screws to firmly fix the supplied fixtures to the back of the TV.

Use the supplied cords to secure the fixtures on the back of the TV with commercially available screws or hooks which have been affixed to a solid object such as a wall or pillar.

Ensure enough space for ventilation by keeping the TV as far away from the wall as possible without pulling the cable too tight.

While carrying out the measures to prevent the TV from falling over, ensure that there is enough space for ventilation.

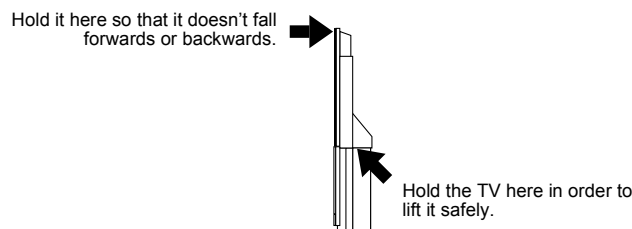
CAUTION:

- Operate only from the power source specified (AC 220 – 240 V, 50 Hz) on the unit.
- Avoid damaging the AC plug and power cord.
- When you are not using this unit for a long period of time, it is recommended that you disconnect the power cord from the main outlet.
- The ambient temperature for using this unit is 0° to 40°C (32° to 104°F). Using the unit outside of this range may lead to it not working correctly or being broken.

CAUTION

When moving the TV, always hold it at the specified places. Holding at anywhere other than the specified places may result in injuries or the TV being damaged or broken.

- Be careful not to trap your feet when lowering the TV.
- To ensure safety, the TV should always be carried by two or more people.



Burn-in

A characteristic of Plasma Display Panels (PDPs) is that displaying the same image for a long time causes a part of the image to stay on the screen (this is called phosphor burn-in).

In order to prevent this burn-in, avoid displaying the same image for long periods of time or using the TV in the regular mode as much as possible.

If burn-in occurs, display moving images such as video software. If the burn-in is not too bad, it may gradually become less noticeable. However, once burn-in has occurred, it will never totally disappear. If still images are frequently displayed, it is recommended that the brightness be reduced, the screen be scrolled or the display position be changed, or the TV be used in full mode.

Point defects

PDPs use collections of fine pixels to display images. While there is no problem with more than 99.99% of these pixels, please understand that a very small number of pixels may not light or may light all the time.

Effect on infrared devices

There may be interference while using infrared devices such as infrared cordless headphones.

Note

The remote controller supplied with this unit is a Class 1 LED product.

Avoid improper installation and never position the unit where good ventilation is impossible.

When installing this TV, distance recommendations must be maintained between the floor and wall, as well as installation in a tightly enclosed area or piece of furniture.

Keep to the minimum distance guidelines shown for safe operation.

Failure to take the following precautions may cause damage to the television or remote control.

DO NOT block the TV's ventilation openings or holes.

(If the ventilation openings or holes are blocked by a newspaper or cloth, etc., the heat may not be able to get out.)

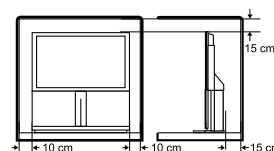
DO NOT place anything on top of the TV.

(such as cosmetics or medicines, flower vases, potted plants, cups, etc.)

DO NOT allow objects or liquid into the cabinet openings.

(If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)

DO NOT place any naked flame sources, such as lighted candles, on the TV.



The surface of the TV screen is easily damaged. Be very careful with it when handling the TV.

Should the TV screen become soiled, wipe it with a soft dry cloth. Never rub it forcefully.

Never use any cleaner or detergent on it.

If there is a fault, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.

CONTENTS

Setting up your TV	3
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Teletext function	13
Using the TV's menu	15
Displaying a computer screen	26
Additional menu operations	28
Additional preparation	30
CH/CC numbers	32
Troubleshooting	34
Specifications	36

Setting up your TV

Caution

- Turn off all the equipment including the TV before connecting anything.

Connecting the aerial and VCR

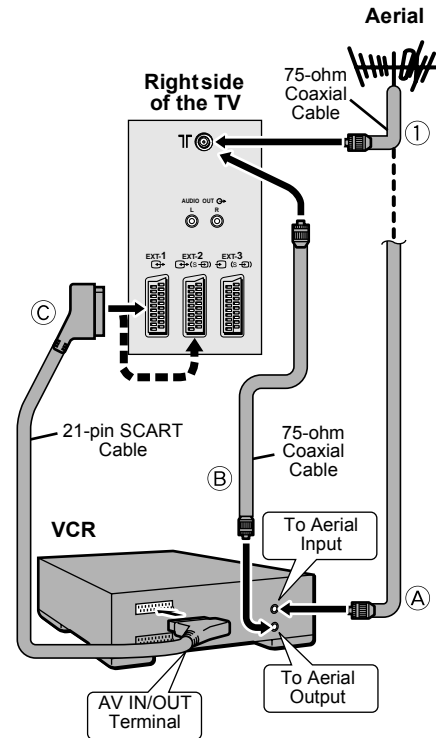
- The connecting cables are not provided.
- For further details, refer to the manuals provided with the devices to be connected.

■ If connecting a VCR, follow ① → ② → ③.

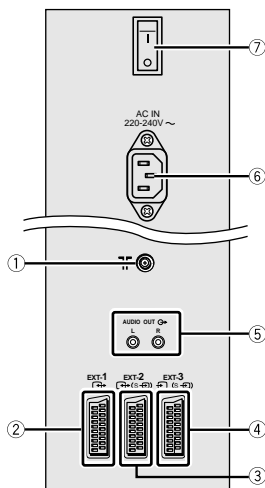
■ If not connecting a VCR, follow ①.

To operate T-V LINK functions, a T-V LINK compatible VCR must be connected to the EXT-2 terminal on the TV. For details about T-V LINK functions, see “T-V LINK FUNCTIONS” on page 6.

- A video can be viewed from the VCR without performing ③. For details, refer to your VCR instruction manual.
- To connect additional external devices, please see “Additional preparation” on page 30.
- To connect speakers and amplifier, please see “Connecting Speakers/Amplifier” on page 31.
- When a decoder is connected to a T-V LINK compatible VCR, set the DECODER (EXT-2) function to ON. For details, see “Using the DECODER (EXT-2) function” on page 29. Otherwise, you will not be able to view scrambled channels.



■ Right side Panel



- ① Aerial socket (3)
- ② EXT-1 terminal (3, 19, 30)
- ③ EXT-2 terminal (3, 6, 19, 30)
- ④ EXT-3 terminal (19, 30)
- ⑤ AUDIO OUT terminal (31)
- ⑥ AC INLET (4)
- ⑦ Main power switch (4, 7)

Connecting the power cord to the AC outlet

Caution

- Operate only from the power source specified (AC 220 – 240 V, 50 Hz) on the unit.
- Failure to use the supplied power cord or to insert it into a correctly earthed outlet may result in electric shocks.

Use the supplied power cord which best suits the area in which you live.

Insert the power cord into the AC inlet on the right side of the TV.

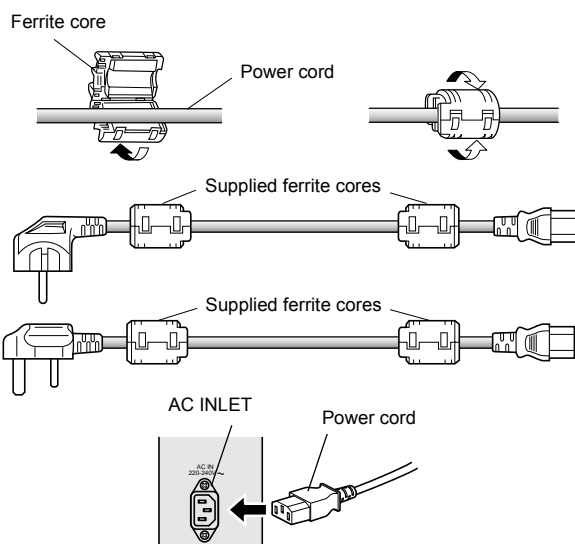
Attaching the ferrite cores

Attach ferrite cores to the power cord.

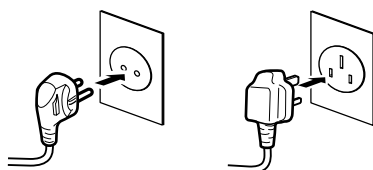
Using the power cord without ferrite cores may lead to noise (interference).

Open the ferrite core, insert the power cord and close the ferrite core.

Attach a ferrite core to each end of the power cord.



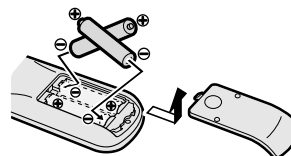
Insert the AC plug into a correctly earthed outlet.



Putting the batteries into the remote control

Use two AAA/R03 dry cell batteries.

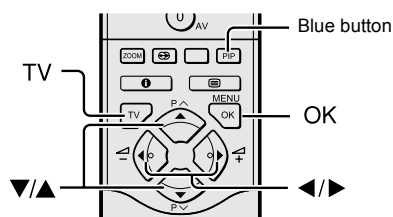
Insert the batteries from the ⊖ end, making sure the ⊕ and ⊖ polarities are correct.



- Follow the warnings printed on the batteries.
- Battery life is about six months to one year, depending on your frequency of use.
- The batteries we supply are only for setting up and testing your TV, please replace them as soon as necessary.
- If the remote control does not work properly, replace the batteries.

Initial settings

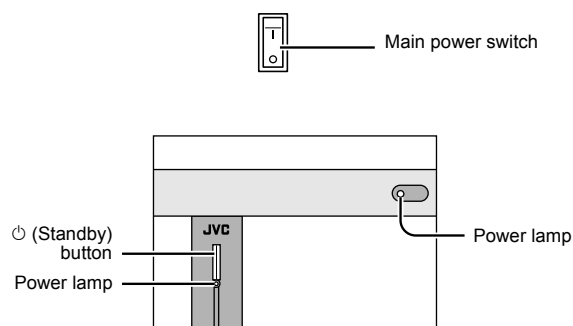
When the TV is first turned on, it enters the initial setting mode, and the JVC logo is displayed. Follow the instructions on the on-screen display to make the initial settings.



1 Turn the power on by pressing the side of the main power switch marked "I"

The Power lamp lights red (for power on), then green (for TV on) and the JVC logo is displayed.

Right side of the TV



- If the power lamp stays red and does not change to green:
Your TV is in the standby mode. Press the ⏻ (Standby) button on the television or the ⏻/I (Standby) button on the remote control to turn your TV on.
- The JVC logo does not appear when your TV has already been turned on once. In this case, use the "LANGUAGE" and "AUTO PROGRAM" functions to make the initial settings. For details, see "INSTALL" on page 22.

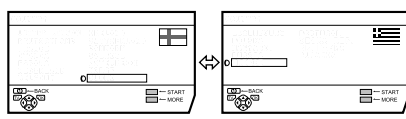
2 Press the OK button

The LANGUAGE menu appears.

**3 Press the ◀/▶ and ▼/▲ buttons to choose ENGLISH. Then press the OK button**

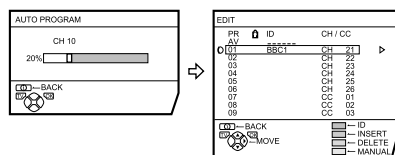
English is set for the on-screen display description. The COUNTRY menu appears as a sub-menu of the AUTO PROGRAM function.

There are two COUNTRY menus. Pressing the yellow button changes the COUNTRY menu as follows:

**4 Press the ◀/▶ and ▼/▲ buttons to choose the country where you are****5 Press the blue button to start the AUTO PROGRAM function**

The AUTO PROGRAM menu appears and received TV channels are automatically registered in the programme numbers (PR).

- To cancel the AUTO PROGRAM function:
Press the **TV** button.



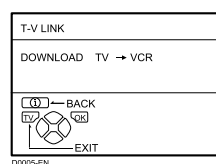
After the TV channels have been registered in the programme numbers (PR), the EDIT menu appears

- You can edit the programme numbers (PR) using the EDIT/MANUAL function. For details, see "EDIT/MANUAL" on page 23.
- If you do not need to use the EDIT/MANUAL function, go to the next step.

If "ACI START/ACI SKIP" appears in the AUTO PROGRAM menu:

You can use the ACI (Automatic Channel Installation) function to decode the ACI data and complete the registration of all the TV channels quickly. For details of the ACI function and how to use it, refer to "Using the ACI function" on page 28.

If you don't want to use the ACI function, press the ▼/▲ buttons to choose ACI SKIP and then press **OK**.

6 Press the OK button to display the T-V LINK menu**7 If you do not have a T-V LINK compatible VCR connected:**

Press the **TV** button to exit the T-V LINK menu. The T-V LINK menu disappears.

If you have a T-V LINK compatible VCR connected to the EXT-2 terminal:

Follow "Downloading the data to VCR" on page 28 to transmit the programme number (PR) data.

Now, the initial settings are complete, and you can watch the TV

- If your TV can detect the TV channel name from the TV channel broadcast signal, the TV channel name is assigned to the programme number (PR) to which the TV channel has been set. However, which TV channels are set to which programme numbers (PR) will depend on the area in which you live.

When the COUNTRY setting is UNITED KINGDOM:

- BBC1, BBC2, ITV, Channel 4 and Channel 5 are automatically set to the programme numbers PR1 to PR5. If the TV doesn't receive one of these TV channels, that programme number (PR) will not be set. Programme number PR6 is not normally set.
- In some areas you may get TV reception from more than one transmitter, for example different ITV regions. In this case each TV channel could be set twice. If this happens, the first set of channels will have the stronger signal. If you want to delete the second set of channels, you will have to do it manually (see "EDIT/MANUAL" on page 23).
- If a TV channel you want to view is not set to a programme number (PR), you can set it using the MANUAL function. For details, see "EDIT/MANUAL" on page 23.
- The AUTO PROGRAM function does not set the programme number PR 0 (AV) for your video cassette recorder. You will need to set this using the MANUAL function.

For users in the UK:

If you have any problems setting up your new TV, please call the **JVC** Helpline on 0870 330 5000.

Users other than those in the UK:

If you have any problems setting up your new TV, please contact your local **JVC** dealer.

T-V LINK FUNCTIONS

When a T-V LINK compatible VCR is connected to the EXT-2 Terminal on the TV, it is easier to set up the VCR and to view videos. T-V LINK uses the following features:

To use T-V LINK functions:

A T-V LINK compatible VCR is necessary.

The VCR must be connected to the EXT-2 terminal on the TV by a fully wired SCART cable.

A "T-V LINK compatible VCR" means a JVC VCR with the T-V LINK logo or a VCR with one of the following logos. However, these VCRs may support some or all of the features described below. For details, refer to your VCR instruction manual.

"Q-LINK" (a trademark of Panasonic Corporation)

"Data Logic" (a trademark of Metz Corporation)

"Easy Link" (a trademark of Phillips Corporation)

"Megalogic" (a trademark of Grundig Corporation)

"SMARTLINK" (a trademark of Sony Corporation)

■ Pre-set Download

Download the registered data on the TV channels from the TV to the VCR.

The Preset Download function automatically begins when the initial setting is complete or whenever the AUTO PROGRAM or EDIT/MANUAL operations are performed.

- This function can be operated using your VCR controls.

When "FEATURE NOT AVAILABLE" is displayed:

If "FEATURE NOT AVAILABLE" is displayed, the download was not performed correctly. Before trying to download again, ensure the following:

- The VCR power is turned on.
- The VCR is T-V LINK compatible.
- The VCR is connected to the EXT-2 terminal.
- The SCART cable is fully wired.

■ Direct Rec

"What You See Is What You Record"

You can record to VCR the images that you are currently viewing on TV by a simple operation. For details, read the manual for your VCR. Operate via the VCR. "VCR IS RECORDING" is displayed.

In the following conditions, the VCR will stop recording if the TV is turned off, if the TV channel or input is switched, or if the menu is displayed on the TV:

- When recording images from an external device connected to the TV.
 - When recording a TV channel after it has been unscrambled on a decoder.
 - When recording a TV channel by using the TV's output because that TV channel cannot be properly received on the VCR's tuner.
 - When the VCR is not ready (for example, when there is no tape inserted), "NO RECORDING" is displayed.
-

- Operation via the TV is not possible.
 - Generally, the VCR cannot record a TV channel that cannot be received properly by the VCR's tuner, even though you can view that TV channel on the TV. However, some VCRs can record a TV channel by using the TV's output if that channel can be viewed on the TV, even though the TV channel cannot be received properly by the VCR's tuner. For details, refer to your VCR instruction manual.
-

■ TV Auto Power On/VCR Image View

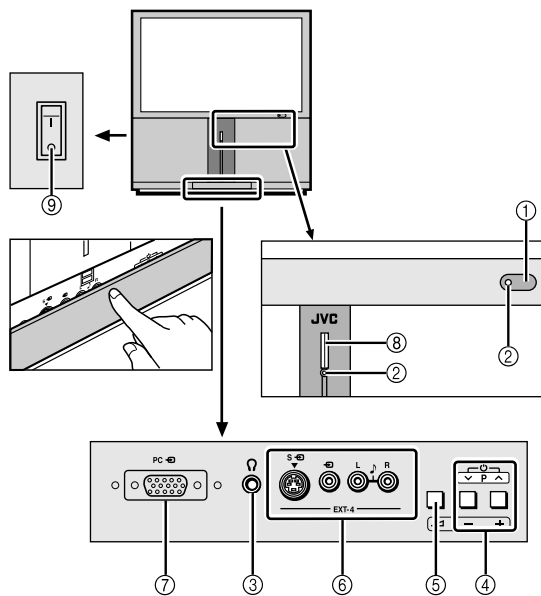
When the VCR starts playing, the TV automatically turns on and the images from EXT-2 terminal are displayed on the screen.

When the VCR menu is operated, the TV automatically turns on and the images from EXT-2 terminal are displayed on the screen.



- This function does not operate if your TV's main power is turned off. Set your TV's main power to on (standby mode).

The T-V LINK function will not work while the external input RGB/PC is chosen.

TV buttons and functions



See the pages in brackets for details.

- ① Remote control sensor
- ② Power lamp (4, 7)
- ③ Headphone jack (mini jack) (30)
- ④ P V/A buttons/ -/+ buttons (8)
- ⑤  (Volume) button (7)
- ⑥ EXT-4 terminal (19, 30)
- ⑦ PC terminal (26)
- ⑧  (Stand by) button (4)
- ⑨ Main power switch

Turn the Main power on

Press the side of the main power switch marked “I”.

The Power lamp lights red and your TV is in the standby mode.

- If the Power lamp lights green, the TV is already on.


To turn the Main power off:

Press the side of the main power switch marked “O”.

The Power lamp goes off.

If you are not going to use the TV for a long period of time, be sure to disconnect the AC plug from the AC socket.


Turn the TV on from standby mode

Press the  (Standby) button on the television or the P V/A buttons to turn the TV on from the standby mode.

Choose a TV channel

Press the P V/A buttons to choose a programme number (PR) or an EXT terminal

Adjust the volume

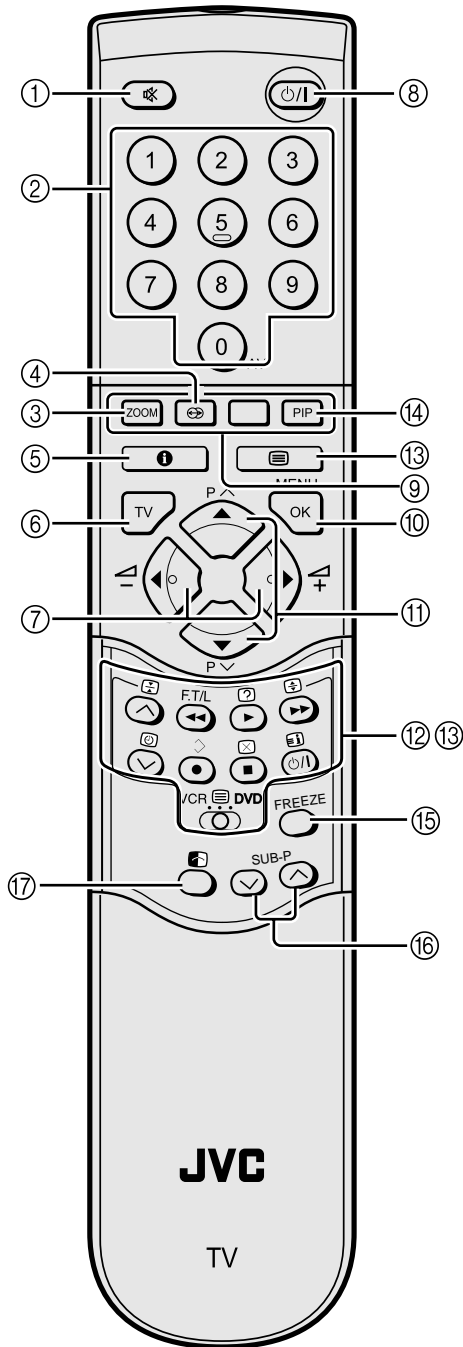
- 1 Press the  (Volume) button**

The volume level indicator appears.

- 2 Press the -/+ buttons while the volume level indicator is displayed**

- The buttons on the TV cannot be used to change the volume of the headphones.

Remote control buttons and functions



- ① Muting button
- ② Number buttons
- ③ ZOOM button
- ④ 3D SOUND button
- ⑤ Information button
- ⑥ TV button
- ⑦ ◀▶ buttons
- ⑧ Standby button
- ⑨ Colour buttons
- ⑩ OK button
- ⑪ ▼▲ buttons
- ⑫ VCR/DVD/Teletext control buttons
- ⑬ VCR DVD switch (Text) button
- ⑭ PIP button
- ⑮ FREEZE button
- ⑯ SUB-P ▼/▲ buttons
- ⑰ SWAP button

Turn the TV on or off from standby mode

Press the **⏻/I** (standby) button to turn the TV on or off.

When the TV is turned on, the power lamp changes from red to green.

- The power can be turned on by pressing the **TV** button, ▼/▲ buttons or Number buttons.

Choose a TV channel

■ Use the number buttons:

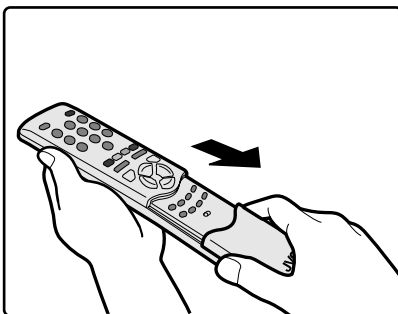
Enter the programme number (PR) of the channel using the number buttons.

Example:

- PR6 → press **6**
- PR12 → press **1** and **2**

■ Use the ▼/▲ buttons:

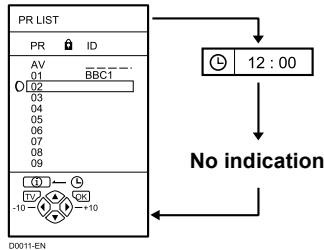
Press the ▼/▲ buttons to choose the programme number (PR) you want.



■ Use the PR LIST:

1 Press the **i** (Information) button to display the PR LIST

Pressing the **i** (information) button changes the display as follows:



2 Press the **◀/▶** and **▼/▲** buttons to choose a programme number (PR). Then press the OK button

- For programme numbers (PR) with the CHILD LOCK function set, the **Ⓐ** (CHILD LOCK) mark is displayed next to the programme number (PR) in the PR LIST.
- You cannot use the **▼/▲** buttons to choose a programme number (PR) with the CHILD LOCK function set.
- Even if you try to choose a programme number (PR) with the CHILD LOCK function set, the **Ⓐ** (CHILD LOCK) mark will appear, and you cannot watch the TV channel. To watch the TV channel, see “CHILD LOCK” on page 21.
- To prevent screen burn-in, the PR LIST menu automatically disappears from the screen if no TV operation has been performed for about one minute. Also, the programme number automatically dim.

Adjust the volume

Press the **◀/▶** buttons to adjust the volume.

The Volume indicator appears and the volume changes as you press the **-/+** buttons.

To listen to the sound using headphones:

See “HEADPHONE” on page 18.

■ Muting the sound

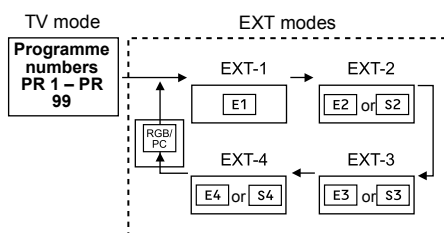
Press the **⊘** (muting) button to turn off the sound.

Pressing the **⊘** (muting) button again restores the previous volume level.

Watch images from external devices

■ Use the **0 (AV)** button:

Press the **0 (AV)** button to choose an EXT terminal.



■ Use the **▼/▲** buttons:

Press the **▼/▲** buttons to choose an EXT terminal.

■ Use the PR LIST:

1 Press the **i** (Information) button to display the PR LIST

2 Press the **◀/▶** and **▼/▲** buttons to choose an EXT terminal. Then press the OK button

- The EXT terminals are registered after the programme number PR 99.
- You can choose a video input signal from the S-VIDEO signal (Y/C signal) and regular video signal (composite signal). For details, see “S-IN (S-VIDEO input)” on page 19.
- If you do not have a clear picture or no colour appears, change the colour system manually. See “COLOUR SYSTEM” on page 17.
- If you choose an EXT terminal with no input signal, the EXT terminal number becomes fixed on the screen.
- This TV set has a function which can automatically change over the input according to a special signal output from an external device. (The EXT-4 terminal does not support it.)
- The PR LIST cannot be used to choose the input from a PC. Use another method when choosing the input from a PC.

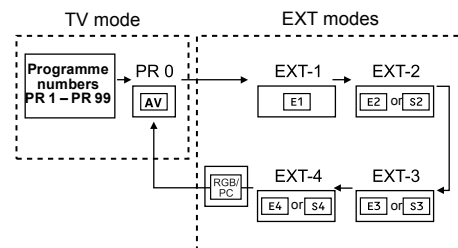
To return to a TV channel:

Press the **TV** button, the **▼/▲** buttons or the Number buttons.

To use the programme number PR 0 (AV):

When the TV and VCR are connected only by the aerial cable, choosing the programme number PR 0 (AV) allows you to view images from the VCR. Set the VCR RF channel to the programme number PR 0 (AV) manually. For details, see “EDIT/MANUAL” on page 23.

Pressing the **0 (AV)** button changes the choice as follows:



- The VCR RF channel is sent as the RF signal from the VCR.
- Also refer to your VCR instruction manual.

ZOOM function

You can change the screen size according to the picture aspect ratio. Choose the optimum one from the following ZOOM modes.

AUTO:

For any picture format except Normal Picture (4:3 Aspect Ratio), the picture will be automatically displayed in the optimum screen size.

For Normal Picture (4:3 Aspect Ratio), the picture displayed using 4:3 AUTO ASPECT menu. For details, see "4:3 AUTO ASPECT" on page 17.

- AUTO may not function properly with poor signal quality. In this case, choose an optimum ZOOM mode manually.
- This TV supports WSS (wide-screen signals). When broadcasts with WSS are received with the ZOOM mode set at AUTO, the most suitable ZOOM mode is automatically chosen according to the WSS received.

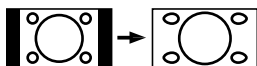
REGULAR:

Use to view a normal picture (4:3 aspect ratio) as this is its original shape.



PANORAMIC:

This mode stretches the left and right sides of a normal picture (4:3 Aspect Ratio) to fill the screen, without making the picture appear unnatural.



- The top and bottom of the picture are slightly cut off.

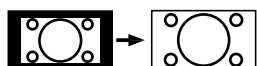
14:9 ZOOM:

This mode zooms up the Wide Picture (14:9 Aspect Ratio) to the upper and lower limits of the screen.



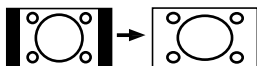
16:9 ZOOM:

This mode zooms up the Wide Picture (16:9 Aspect Ratio) to the full screen.



FULL:

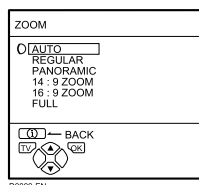
This mode uniformly stretches the left and right sides of a normal picture (4:3 aspect ratio) to fill the wide TV screen.



Use for pictures with a 16:9 aspect ratio that have been squeezed into a normal picture (4:3 aspect ratio), you can restore their original dimensions.

Choose the ZOOM mode

1 Press the **ZOOM** button to display the ZOOM menu



2 Press the **▼/▲** buttons to choose a ZOOM mode. Then press the **OK** button

The picture expands and the chosen ZOOM mode is displayed in about 5 seconds.

- The ZOOM mode may be automatically changed due to the control signal from an external device. When you want to return to the previous ZOOM mode, choose the ZOOM mode again.

Adjusting the visible area of the picture

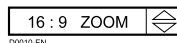
If subtitles or the top (or bottom) of the picture are cut off, adjust the visible area of the picture manually.

1 Press the **ZOOM** button

The ZOOM menu appears.

2 Press the **OK** button to display the ZOOM mode indicator

Indicator is displayed.



3 While it is displayed, press the **▼/▲** buttons to adjust the visible area vertically

- You cannot adjust the visible area in REGULAR or FULL mode.

3D SOUND function

You can enjoy sounds with a wider ambience.

Press the **3D** (3D SOUND) button to turn the 3D SOUND function on or off

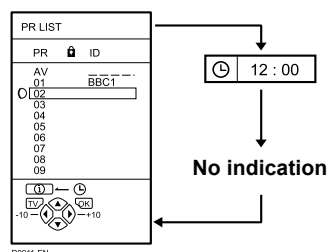
- The 3D SOUND function does not work properly with mono sound.
- The 3D SOUND function can be also turned on or off by using the SOUND SETTING menu. For details, see "3D SOUND" on page 18.

Displaying the current time

You can display the Current Time on the screen.

Press the **i** (Information) button to display the current time

Pressing the **i** (Information) button changes the display as follows:



- This TV uses teletext data to set the current time. If the TV has not received a TV channel that has teletext programmes since it was turned on, the time display is blank. To view the current time, choose a TV channel that has teletext programmes. The time will still be displayed as long as you do not turn off the TV, even if you choose other TV channels.
- When watching videos, an incorrect current time is sometimes displayed.

Return to TV channel instantly

You can return to a TV channel instantly.

Press the **TV** button

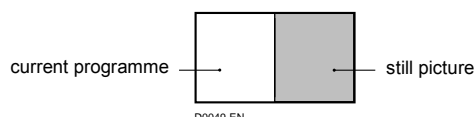
The TV returns to the TV mode and a TV channel appears.

Using the FREEZE function

You can view the current programme as a still picture.

1 Press the **FREEZE** button

The still picture of the current picture will appear.



To cancel the FREEZE function:

Press the **FREEZE** button again.

- The FREEZE function does not work while a sub-picture is displayed.
- The still picture cannot be output from the TV.
- Compared to the normal picture the two pictures are vertically stretched.
- To prevent screen burn-in, the FREEZE function is automatically cancelled if no TV operation has been performed for about 15 minutes.

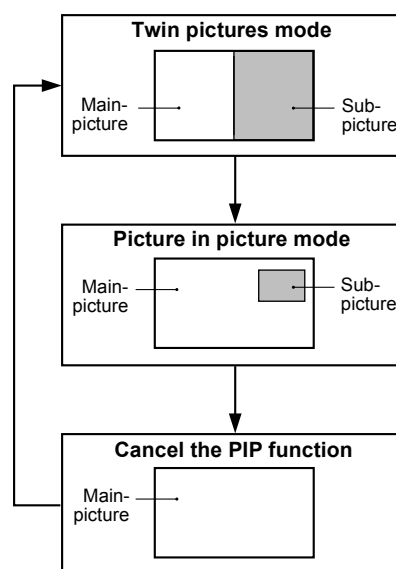
Using the PIP function (picture in picture)

You can view two pictures (Main-picture and sub-picture). You can view a TV programme received by the TV and a video programme from an external device at the same time.

- If a device which can receive broadcast programmes (such as a satellite tuner or VCR) is connected to the TV's EXT terminal, both the broadcast programme received by that device and the broadcast programme received by the TV can be viewed at the same time.
- With just the TV, two broadcast programmes cannot be viewed at the same time.
- In twin pictures mode, compared to the normal picture the two pictures are vertically stretched.

1 Press the **PIP** button

Pressing the **PIP** button changes the PIP mode as follows:



- When the **PIP** button is pressed while watching a TV programme, the picture from an EXT terminal is displayed as the sub-picture. Press the **SUB-P** \vee/\wedge buttons to change the sub-picture to the picture from another EXT terminal.
- When the **PIP** button is pressed while watching a picture from an EXT terminal, the picture from a TV channel or the picture from another EXT terminal is displayed as the sub-picture. Press the **SUB-P** \vee/\wedge buttons to change the sub-picture to the picture from another TV channel or another EXT terminal.
- The main-picture and sub-picture must be different.
- If the main-picture signal is poor, the quality of the sub-picture may also be poor.
- If the pictures have different standards, the top and bottom of one of them may be missing.
- The sub-picture will disappear if the TV receives a control signal from the external device.
- The ZOOM function does not work in the twin-picture mode.
- The STEREO / I • II function does not work in the EXT modes even if you are viewing a TV programme in the sub-picture.
- The BLUE BACK function does not work in the twin picture mode or the picture-in-picture mode.
- The sub-picture cannot be output from the TV.

Listening to the sound of the sub-picture:

You can listen to the sound of the sub-picture with the headphones while listening to the sound of the main-picture from the TV speakers.

For details, see “HEADPHONE” on page 18.

Changing the position of the sub-picture:

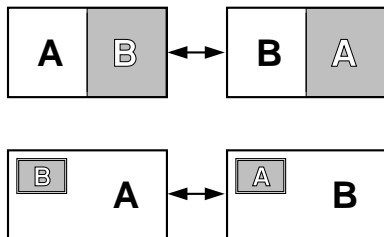
You can choose one of four positions.

For details, see “Using the PIP function (picture in picture)” on page 11.

Swapping the main-picture and sub-picture:

Press the **SWAP** button.

The main-picture and sub-picture will be swapped.



Operating a JVC brand VCR or DVD player

You can operate a JVC brand VCR or DVD player. Pressing the button that looks the same as the original remote control button of a device makes the function work in the same way as the original remote control.

1 Set the VCR DVD Switch to the VCR or DVD position

VCR:

When you are operating the VCR, set the switch to the VCR position.

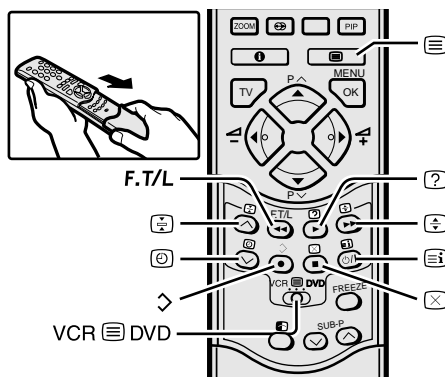
DVD:

When you are operating the DVD player, set the switch to the DVD position.

2 Press the VCR/DVD Control Button to control your VCR or DVD player

- If your device is not made by JVC, these buttons cannot be used.
- Even if your device is made by JVC, some of these buttons or any one of the buttons may not work, depending on the device.
- You can use the \vee/\wedge buttons to choose a TV channel. The VCR will receive or choose the chapter the DVD player plays back.
- Some DVD player models use the \vee/\wedge buttons for both operating of Fast forward/backward functions and choosing the chapter. In this case, the $\blacktriangleleft/\blacktriangleright$ buttons do not work.

Teletext function



Basic operation


You can view three types of teletext broadcasts on the TV: FLOF (Fastext), TOP and WST.

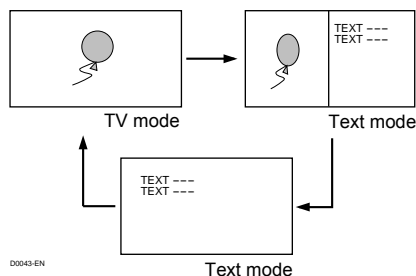
1 Choose a TV channel with a teletext broadcast

2 Set the VCR DVD switch to the (Text) position



3 Press (Text) button to display the teletext


Pressing  (Text) button changes the mode as follows:



- In TV and Text mode, compared to the normal picture the two pictures are vertically stretched.

4 Choose a teletext page by pressing the / buttons, Number buttons or Colour buttons

To return to the TV mode:

Press the **TV** button or  (Text) button.

- If you have trouble receiving teletext broadcasts, consult your local dealer or the teletext station.
- The ZOOM function will not operate in the TV and text mode or Text mode.
- No menu operations are possible when viewing a teletext programme.
- Language display depends on the country which was set on the COUNTRY menu. If characters on a Teletext programme do not appear properly, change the COUNTRY Setting to your country's. For details, see "Changing the COUNTRY setting" on page 29.

Using the List Mode

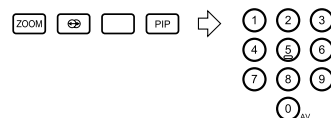
You can store the numbers of your favourite teletext pages in memory and call them up quickly using the colour buttons.

■ To store the page numbers:

1 Press **F.T/L** button to engage the List mode

The stored page numbers are displayed at the bottom of the screen.

2 Press a Colour button to choose a position. Then press the Number buttons to enter the page number



3 Press and hold down (Store) button

The four page numbers blink white to indicate that they are stored in memory.

■ To call up a stored page:

1 Press the **F.T/L** button to engage the List mode

2 Press a colour button to which a page has been assigned



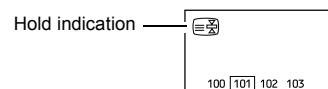
To exit the List mode:

Press the **F.T/L** button again.


Hold

You can hold a teletext page on the screen for as long as you want, even while several other teletext pages are being received.

Press the (Hold) button



To cancel the Hold function:

Press  (Hold) button again.

- In order to prevent burn-in, the Hold function is cancelled after 15 minutes.

Sub-page

Some teletext pages include sub-pages that are automatically displayed.
You can hold any sub-page, or view it at any time.

1 Press the (Sub-page) button to operate the Sub-page function


Sub-page numbers are displayed at the left of the screen.

Colour*	Meaning of sub-page number
Yellow	Currently being displayed.
White	Can be displayed.
Blue or Red	Cannot be displayed and it is not sent.

* Background colour of the sub-page number.

2 Press the / buttons to choose a sub-page number


To cancel the Sub-page function:

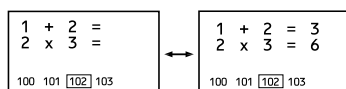
Press the  (Sub-page) button again.

Reveal

Some teletext pages include hidden text (such as answers to a quiz).


You can display the hidden text.

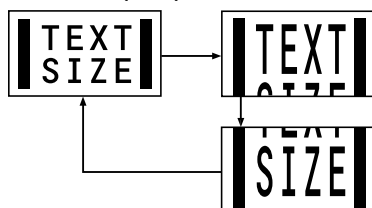
Each time you press the  (Reveal) button, text is hidden or revealed



Size


You can double the height of the teletext display.

Press the  (size) button.



Index

You can return to the index page instantly.

Press  (Index) button

FLOF (Fastext)/TOP/WST:

Returns to page 100 or a previously specified page.

List mode:

Returns to the page number displayed in the lower left area of the screen.

Cancel

You can search for a teletext page while watching TV.


1 Press the Number button to enter a page number, or press a Colour button

The TV searches for a teletext page.

2 Press (Cancel) button

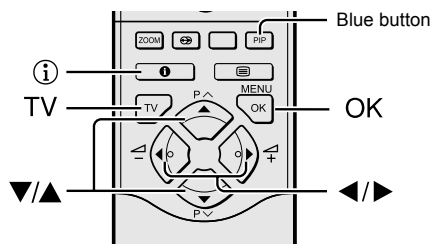
The TV programme appears. When the TV finds the teletext page, its page number appears in the upper left of the screen.

3 Press (Cancel) button to return to a teletext page when the page number is on the screen

- The TV mode cannot be resumed even by pressing the  (Cancel) button. A TV programme is temporarily displayed instead of the teletext programme.

Using the TV's menu

This TV has a number of functions you can operate using menus. To use all your TV's functions, you need to understand the basic menu operating techniques fully.

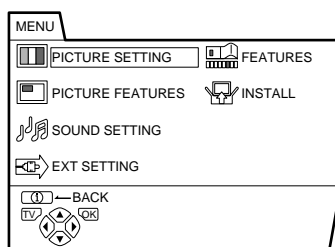


5 Press the OK button to complete the setting

The menu disappears.

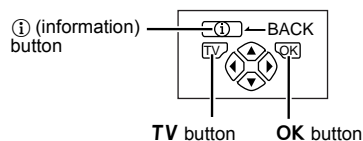
Basic operation

1 Press the OK button to display the MENU (main menu)



D0013-EN

- The display appearing at the bottom of a menu shows the buttons on the remote control you can use when you operate a chosen function.



To prevent screen burn-in, the menu automatically disappears from the screen if no TV operation has been performed for about one minute.

2 Press the ▼/▲ buttons to choose a menu title, and press the OK button

The menu appears.

To return to the previous menu:

Press the ⓘ (information) button.

To exit a menu instantly:

Press the TV button.

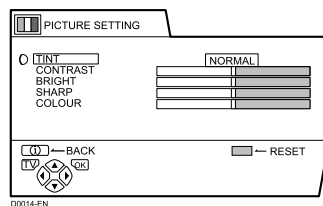
3 Press the ▼/▲ buttons to choose a function

- For details of the functions in the menus, see the following pages.

4 Press the ◀/▶ buttons to choose the setting of that function

- If you want to operate a function which appears only with its name, follow the descriptions of that function on the following pages.
- The display appearing at the bottom of a menu shows you the button on the remote control that you can use when you operate a chosen function.

PICTURE SETTING



■ TINT

You can select one of three TINT modes (three kinds of picture settings) to adjust the picture settings automatically.

COOL:

A cool white colour base with a boost in the colour and contrast levels that creates a more vivid picture.

WARM:

A warm orange/red colour base that creates the appropriate colour and contrast levels for watching films.

NORMAL:

A normal white colour base with normal colour and contrast levels.

■ Picture Adjustment

You can change the picture settings of each TINT mode as you like.

CONTRAST:

You can adjust the picture contrast.

- ◀ : lower
- ▶ : higher

BRIGHT:

You can adjust the picture brightness.

- ◀ : darker
- ▶ : brighter

SHARP:

You can adjust the picture sharpness.

- ◀ : softer
- ▶ : sharper

COLOUR:

You can adjust the picture colour.

- ◀ : lighter
- ▶ : deeper

HUE:

You can adjust the picture tint.

- ◀ : reddish
- ▶ : greenish

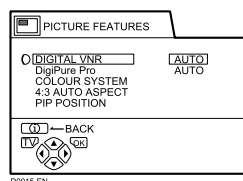
- You can change the HUE setting (picture hue) only when the colour system is NTSC 3.58 or NTSC 4.43. (See "Specifications" on page 36.)

To return to the default settings in each TINT mode:

Press the blue button.

- This returns the picture settings in the TINT mode you have chosen to the default settings, and stores them in the TINT mode.

PICTURE FEATURES



■ DIGITAL VNR (video noise reduction)

The DIGITAL VNR function cuts down the amount of noise (interference or snowing) in the original picture. You can choose from the three DIGITAL VNR function settings of AUTO, MIN and MAX.

AUTO:

The TV will automatically adjust the level of the DIGITAL VNR effect to match the amount of noise in the picture, giving you the best possible picture.

- If you set the DIGITAL VNR effect too high it can make the picture less sharp. We recommend you use the AUTO setting if you can.

MIN:

The level of the DIGITAL VNR effect is set to the minimum. If you set the DIGITAL VNR function to AUTO but feel that the sharpness of the original picture has not been reproduced fully, change the setting from AUTO to MIN.

- The MIN setting is not suitable for low-quality pictures which contain a lot of noise.

MAX:

The level of the DIGITAL VNR effect is set to the maximum. If you set the DIGITAL VNR function to AUTO but still notice some noise, change the setting from AUTO to MAX.

- The MAX setting is not suitable for high-quality pictures which contain very little noise.

■ DigiPure Pro

The DigiPure Pro function uses the latest in digital technology to give you a natural-looking picture. The DigiPure Pro function includes the following two functions.

DigiPure function:

This function helps to create a natural-looking picture by eliminating unnecessary edges from high-contrast and crisp images. For images with low-contrast, edges are added to produce a sharper, more detailed picture.

You can choose from the three DigiPure function settings of AUTO, MIN and MAX.

- If you set the DigiPure effect too high on a low-quality picture that contains a lot of noise, this may actually make the noise worse. We recommend you use the AUTO setting if you can.

Picture motion compensation function:

This function displays fast-moving pictures (for example, the players or ball in a football game) more smoothly and naturally on the screen.

- The effect level of the picture motion compensation function cannot be changed. The effect level is the same no matter which of the AUTO, MIN or MAX settings is used.

1 Choose DigiPure Pro

2 Press the ◀/▶ buttons to choose a setting. Then press the OK button

AUTO:

The TV will automatically adjust the level of the DigiPure effect to match the amount of noise in the picture, giving the best possible picture.

MIN:

The level of DigiPure effect is set to the minimum. When you set the DigiPure Pro function to AUTO and notice some noise, change the setting from AUTO to MIN.

- The MIN setting is not suitable for high-quality pictures which contain very little noise.

MAX:

The level of DigiPure effect is set to the maximum. If you set the DigiPure Pro function to AUTO but feel that the original picture quality has not been reproduced fully, change the setting from AUTO to MAX.

- The MAX setting is not suitable for low-quality pictures which contain a lot of noise.

OFF:

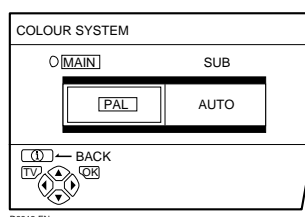
The DigiPure Pro function is turned off.

■ COLOUR SYSTEM

The colour system is chosen automatically. However, if the picture is not clear or no colour appears, choose the colour system manually.

1 Choose COLOUR SYSTEM. Then press the OK button

The sub-menu of the COLOUR SYSTEM function appears.



2 Press the ◀/▶ buttons to choose MAIN or SUB

MAIN:

You can change the colour system of the main-picture.

SUB:

You can change the colour system of the sub-picture.

- Choose MAIN when a sub-picture is not displayed.

3 Press the ▼/▲ buttons to choose the appropriate colour system. Then press the OK button

PAL:

PAL system

SECAM:

SECAM system

NTSC 3.58:

NTSC 3.58 MHz system

NTSC 4.43:

NTSC 4.43 MHz system

AUTO:

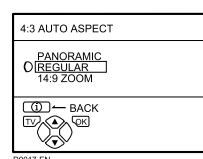
This function detects a colour system from the input signal. You can only use this when you are viewing a picture from programme number PR 0 (AV), or an EXT terminal.

- The AUTO function may not work properly if you have poor signal quality. If the picture is abnormal in the AUTO function, choose another colour system manually.
- You cannot choose NTSC 3.58 or NTSC 4.43 for programme numbers PR 0 (AV) to PR 99.

■ 4:3 AUTO ASPECT

You can choose one of three ZOOM modes, REGULAR, PANORAMIC or 14:9 ZOOM, as the ZOOM mode for the normal picture (4:3 aspect ratio).

1 Choose 4:3 AUTO ASPECT then press the OK button



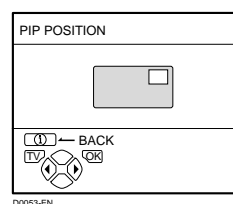
2 Press the ▼/▲ buttons to choose a ZOOM mode

■ PIP POSITION

You can choose one of four positions for the sub-picture.

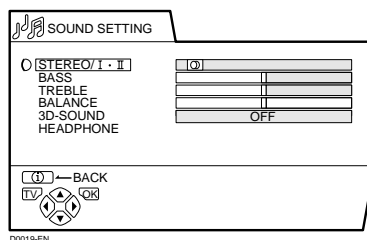
1 Press the ▼/▲ buttons to choose PIP POSITION. Then press the OK button

The PIP POSITION menu appears.



2 Press the ◀/▶ buttons to choose the position. Then press the OK button

SOUND SETTING



■ STEREO / I • II

When you are viewing a bilingual broadcast programme, you can choose the sound from Bilingual I (Sub I) or Bilingual II (Sub II). When stereo broadcasting is received poorly, you can change from stereo to mono sound so that you can hear the broadcast more clearly and easily.

∞ : Stereo sound

○ : mono sound

I : Bilingual I (sub I)

II : Bilingual II (sub II)

- The sound mode you can choose differs depending on the TV programme.
- This function does not work in the EXT modes. And this function does not appear in the SOUND SETTING menu.

■ Sound Adjustment

You can adjust the sound to your liking.

BASS:

You can adjust the low tone of the sound.

◀ : weaker

▶ : strong

TREBLE:

You can adjust the high tone of the sound.

◀ : weaker

▶ : strong

BALANCE:

You can adjust the volume balance between the left and right speaker.

◀ : turn the left speaker's volume level up.

▶ : turn the right speaker's volume level up.

■ 3D SOUND

You can enjoy sounds with a wider ambience.

ON:

This function is turned on.

OFF:

This function is turned off. The menu disappears.

- The 3D SOUND function does not work properly with mono sound.
- You can turn the 3D SOUND function on or off with a single press. For details, see "3D SOUND function" on page 10.

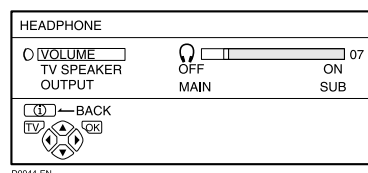
■ HEADPHONE

You need to use the HEADPHONE menu to adjust the volume of the headphones.

The HEADPHONE menu can also be used to set whether or not sound comes from the TV speakers when the headphones are being used and to perform the settings for the sound coming from the headphones.

1 Press the ▼/▲ buttons to choose HEADPHONE. Then press the OK button.

The sub-menu of the HEADPHONE function appears.



2 Press the ▼/▲ buttons to choose a function. Then press the ◀/▶ buttons to change the setting

VOLUME:

You can change the volume of the headphones.

TV SPEAKER:

You can turn the TV's speakers on or off.

ON:

The sound comes from the TV's speakers when using the headphones.

OFF:

The sound does not come from the TV's speakers when using the headphones.

- The sound from the external speakers cannot be stopped even if you set the TV SPEAKER to OFF and connect the headphones to the TV. If you want to stop the sound from the external speakers, please turn off all amplifiers connected to the TV.

OUTPUT:

You can choose the sound output to the headphones.

MAIN:

You can listen to the sound of the main-picture with your headphones.

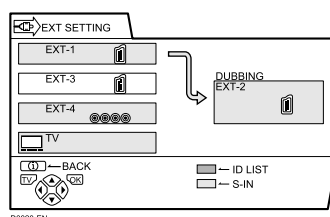
SUB:

You can listen to the sound of the sub-picture with your headphones.

- When a sub-picture is not displayed, the sound of the programme which is currently being viewed is output to the headphones irrespective of the OUTPUT setting.
- When a sub-picture is displayed, the sound of the sub-picture can be listened to with the headphones while listening to the sound of the main-picture with the TV speakers. To do this, set TV SPEAKER to ON and OUTPUT to SUB.

3 Press the OK button

EXT SETTING



■ S-IN (S-VIDEO input)

When connecting a device (such as S-VHS VCR) which enables an S-VIDEO signal (Y/C signal) to be output, you can enjoy high-quality picture of the S-VIDEO signal (Y/C signal).

Preparation:

- First, read the Device Instruction Manual and "Additional preparation" on page 30 to connect the device to the TV properly. Second, follow the Device Instruction Manual to set the device so that a S-VIDEO signal (Y/C signal) can be output to the TV.
- Do not set S-IN (S-VIDEO input) to the EXT terminal connected to a device which cannot output a S-VIDEO (Y/C signal). If it is set wrongly, a picture cannot appear.

1 Choose an EXT terminal

2 Press the yellow button and set the S-IN (S-VIDEO input).

Then press the OK button

An S-IN (S-VIDEO input) mark is displayed. You can view an S-VIDEO signal (Y/C signal) instead of the regular video signal (composite signal).

To cancel the S-IN (S-VIDEO input) setting:

Press the yellow button and turn off S-IN (S-VIDEO input) mark. The regular video signal (composite signal) pictures are resumed.

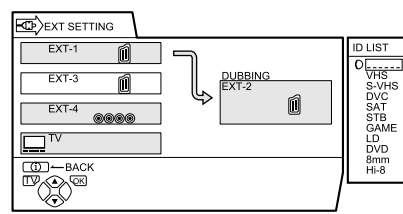
- The EXT-1 terminal does not support S-VIDEO signal (Y/C signal) and you cannot set S-IN (S-VIDEO input) in the EXT-1 terminal.
- Setting S-IN (S-VIDEO input) changes the head character from "E" to "S". For example, "E2" is changed to "S2".
- Even an device which enables the S-VIDEO signal (Y/C signal) to be output may output a regular video signal (composite signal) depending on the device setting. If a picture cannot appear because S-IN (S-VIDEO input) setting has been made, read the device Instruction Manual carefully again to check for the device settings.

■ ID LIST

You can have a name for each of the devices connected to each EXT terminal. Giving a name to an EXT terminal makes the EXT terminal number appear on the screen, together with the name.

1 Choose an EXT terminal

2 Press the blue button to display the name list (ID LIST)



3 Press the ▼/▲ buttons to choose a name. Then press the OK button

The ID LIST disappears and the name is assigned to the EXT terminal.

- You cannot assign an EXT terminal name not found in the name list (ID LIST).

To erase a name assigned to the EXT terminal:
Choose a blank space.

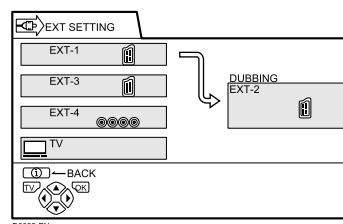
4 Press the OK button to complete the setting

■ DUBBING

You can choose a signal source to be output from an EXT-2 terminal.

You can choose any one of the output signal of the device connected to the EXT terminal and the picture and sound from a TV channel you are currently viewing to output it to the EXT-2 terminal.

1 Press the ◀/▶ buttons to choose the arrow from the menu



2 Press the ▼/▲ buttons to choose an EXT terminal or TV. Then press the OK button

The arrow in the menu represents a signal flow. The left side of the arrow denotes a signal source output from the EXT-2 terminal.

EXT-1/EXT-3/EXT-4:

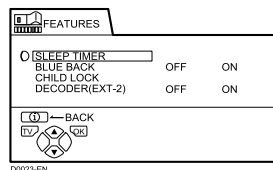
The output signal of the device connected to an EXT terminal passes through the TV and is output from the EXT-2 terminal.

TV:

The picture and sound of the TV channel you are currently viewing are output from the EXT-2 terminal.

- During dubbing, you cannot turn off the TV. Turning off the TV also turns off the output from the EXT-2 terminal.
- When you choose an EXT terminal as an output, you can view a TV programme or a picture from the other EXT terminal while dubbing the picture from a device connected to the EXT terminal onto a VCR connected to the EXT-2 terminal.
- The RGB signals from the TV games cannot be output. Teletext programmes cannot be output.
- The sub-picture displayed by the PIP function cannot be output.
- The still picture displayed by the FREEZE function cannot be output.

FEATURES

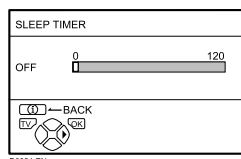


■ SLEEP TIMER

You can set the TV to automatically turn off after a specified period of time.

1 Choose SLEEP TIMER, then press the **OK** button

A Sub-menu of the SLEEP TIMER function appears.



2 Press the ◀▶ buttons to set the period of time. Then press the **OK** button

You can set the period of time a maximum of 120 minutes (2 hours) in 10 minute steps.

- One minute before the SLEEP TIMER function turns off the TV, "GOOD NIGHT!" appears.
- The SLEEP TIMER function cannot be used to turn off the TV's main power.
- When the SLEEP TIMER function is on, you can display the Sub-menu of the SLEEP TIMER function again to confirm or change the remaining period of time of the SLEEP TIMER function. Press the **OK** button to exit the menu after confirming or changing the remaining time.

To cancel the SLEEP TIMER function:

Press the ◀ button to set a period of time to "OFF."

■ BLUE BACK

You can set the TV to automatically change to a blue screen and mute the sound if the signal is weak or absent, or when there is no input from an external device.

ON:

This function is turned on.

OFF:

This function is turned off.

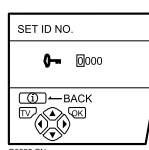
■ CHILD LOCK

When there is a TV channel you wish your children not to watch, you can use the CHILD LOCK function to lock out the TV channel. Even when a child chooses a programme number (PR) in which a locked TV channel has been registered, the screen will change to blue and displays **Ⓐ** (CHILD LOCK) so the TV channel cannot be viewed. Unless you enter a pre-set ID number by a special operation, the lock cannot be released and the child cannot view the TV channel programmes.

To set the CHILD LOCK function

1 Choose CHILD LOCK, then press the **0 (AV)** button

"SET ID NO." (ID number setting screen) appears.



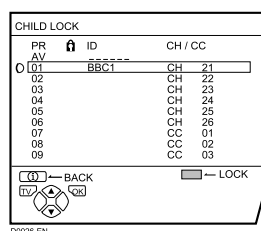
2 Set the ID number to your liking

1 Press the ∇/\blacktriangle buttons to choose a number.

2 Press the $\blacktriangleleft/\blacktriangleright$ buttons to move the cursor.

3 Press the **OK** button

The Sub-menu of CHILD LOCK appears.



4 Press the ∇/\blacktriangle buttons to choose a TV channel

Every time you press the ∇/\blacktriangle buttons, the programme number (PR) changes, and the picture of the TV channel registered in the programme number (PR) is displayed on the screen.

5 Press the blue button and set the CHILD LOCK function.

Then press the **OK button**

Ⓐ (CHILD LOCK) appears and the TV channel is locked.

To reset the CHILD LOCK function:

Press the blue button again.

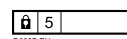
Ⓐ (CHILD LOCK) disappears.

To disable easy resetting of the CHILD LOCK function, the menu disappears by choosing the CHILD LOCK function and pressing the **OK** button as in the ordinary menu operation.

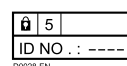
To view a locked TV channel

1 Choose a programme number (PR) in which a TV channel locked with the Number buttons or PR LIST

The screen changes to blue and the **Ⓐ** (CHILD LOCK) appears. You cannot view the TV channel.



2 Press the **i** (Information) button to display "ID NO." (ID NO. input screen).



3 Press the Number buttons to enter the ID number

The lock is temporarily released so you can view the TV channel.

If you have forgotten the ID number:

Perform step 1 of "To set the CHILD LOCK function". After confirming the ID number, press the **TV** button to exit the menu.

- In order to prevent burn-in, **Ⓐ** (CHILD LOCK) disappears after 1 minute if no operation is performed.
- Even if you reset the lock temporarily, it does not mean that the CHILD LOCK function set for the TV channel is cancelled. The next time anyone attempts to view the TV channel, it will be locked again.
- If you would like to cancel the CHILD LOCK function, you must perform the operation "To set the CHILD LOCK function" again.
- To disable easy choosing of a programme number (PR) in which a locked TV channel has been registered, the programme number (PR) has been set that it cannot be chosen by the ∇/\blacktriangle buttons or the operation buttons at the TV.
- To disable easy resetting of the lock, "ID NO." (ID NO. input screen) is set so that it cannot appear unless you press the **i** (Information) button.

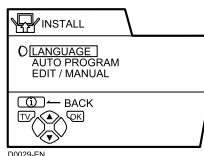
■ DECODER (EXT-2)

You can only use this function when connecting a Decoder with a T-V LINK compatible VCR connected to the EXT-2 terminal. To operate this function, see "Using the DECODER (EXT-2) function" on page 29.

Caution

- If you have not connected a Decoder with a T-V LINK compatible VCR connected to the EXT-2 terminal, setting this function to "ON" by mistake causes the picture/sound of a TV channel you are currently viewing not to be issued.

INSTALL



■ LANGUAGE

You can choose the language you want to use for the on-screen display from the language list in a menu.

1 Choose LANGUAGE, then press the OK button

A sub-menu of the LANGUAGE function appears.



2 Press the ◀/▶ and ▼/▲ buttons to choose a language.

Then press the OK button

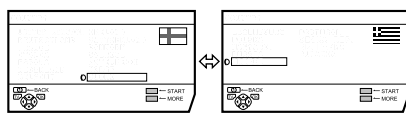
■ AUTO PROGRAM

You can automatically register the TV channels which can be received well at your home in the TV's programme numbers (PR) by performing the following.

1 Choose AUTO PROGRAM. Then press the OK button

The COUNTRY menu appears as a sub-menu of the AUTO PROGRAM function.

There are two COUNTRY menus. Pressing the yellow button changes the COUNTRY menu as follows:

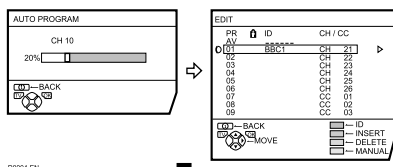


2 Press the ◀/▶ and ▼/▲ buttons to choose the country where you are

3 Press the blue button to start the AUTO PROGRAM function

The AUTO PROGRAM menu appears and received TV channels are automatically registered in the programme numbers (PR).

- To cancel the AUTO PROGRAM function, press the TV button.



After the TV channels have been registered in the programme numbers (PR), the EDIT menu appears.

- You can edit the programme numbers (PR) using the EDIT/MANUAL function. For details, see "EDIT/MANUAL" on page 23.

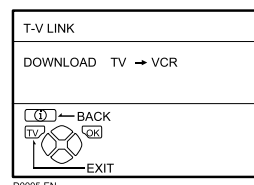
- If you do not need to use the EDIT/MANUAL function, go to the next step.

If "ACI START/ACI SKIP" appears in the AUTO PROGRAM menu:

You can use the ACI (Automatic Channel Installation) function to decode the ACI data and complete the registration of all the TV channels in a short time. For details of the ACI function and how to use it, refer to "Using the ACI function" on page 28.

If you don't want to use the ACI function, press the ▼/▲ buttons to choose ACI SKIP and then press OK.

4 Press the OK button to display the T-V LINK menu



5 If you do not have a T-V LINK compatible VCR connected:

Press the TV button to exit the T-V LINK menu.

If you have a T-V LINK compatible VCR connected to the EXT-2 terminal:

Follow the operating procedure "Downloading the data to VCR" on page 28 to transmit the Programme number (PR) data.

- When your TV can detect the TV channel name from the TV channel broadcast signal, it automatically registers the TV channel name (ID) to the Programme number (PR) in which the TV channel has been registered.

When the COUNTRY setting is UNITED KINGDOM:

- BBC1, BBC2, ITV, Channel 4 and Channel 5 are automatically set to the programme numbers PR1 to PR5. If the TV doesn't receive one of these TV channels, that programme number (PR) will not be set. Programme number PR6 is not normally set.
- In some areas you may get TV reception from more than one transmitter, for example different ITV regions. In this case each TV channel could be set twice. If this happens, the first set of channels will have the stronger signal. If you want to delete the second set of channels, you will have to do it manually (see "EDIT/MANUAL" on page 23).
- If a TV channel you want to view is not set to a Programme number (PR), manually set it using the MANUAL function. For details, see "EDIT/MANUAL" on page 23.
- No TV channel is registered in programme number PR 0 (AV). When you want to register a TV channel to PR 0 (AV) manually set it using the MANUAL function. For details, see "EDIT/MANUAL" on page 23.

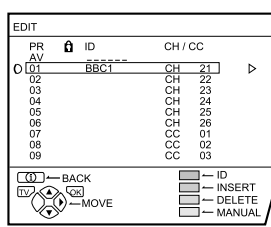
■ EDIT/MANUAL

The EDIT/MANUAL functions are divided into two types: editing of the current programme numbers (PR) (EDIT functions) and manual registration of a TV channel you want to view to the programme number (PR) (MANUAL function). The details about these functions are:

Caution

- Using the MOVE, DELETE or INSERT function rewrites the current programme numbers (PR) list. Therefore, the Programme number (PR) of some of the TV channels will change.
- Using the MANUAL function for a TV channel for which the CHILD LOCK function has been set cancels the CHILD LOCK function for the TV channel.
- Using the MANUAL function for a TV channel for which the DECODER (EXT-2) function has been set to ON changes the setting of the DECODER (EXT-2) function for the TV channel to OFF.
- When a TV channel has already been registered in PR 99, using the INSERT function deletes the TV channel.

1 Choose EDIT/MANUAL, then press the OK button



- For programme number PR 0, "AV" appears in the Programme numbers (PR) list.
- An EXT terminal number does not appear in the programme numbers (PR) list.
- The CH/CC number is a number unique to the TV and corresponding to the Channel number of a TV channel. For the relationship of a Channel number and a CH/CC number, see "CH/CC numbers" on page 32.

2 Follow the description of a function you want to use

MOVE:

This function changes a programme number (PR) of a TV channel.

ID:

This function registers a Channel name (ID) to a TV channel.

INSERT:

This function adds a new TV channel in the current programme numbers (PR) list by using the CH/CC number.

- You cannot use the INSERT function if you do not know a Channel number of a TV channel. Use the MANUAL function to register a TV channel in the Programme number (PR).

DELETE:

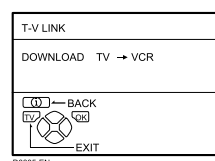
This function deletes a unnecessary TV channel.

MANUAL:

This function manually registers a new TV channel in a programme number (PR).

3 Press the OK button to complete the settings

The T-V LINK menu appears.



4 If you do not have a T-V LINK compatible VCR connected:

Press the **TV** button to exit the T-V LINK menu.

The T-V LINK menu disappears and all the settings are completed.

If you have a T-V LINK compatible VCR connected to the EXT-2 terminal:

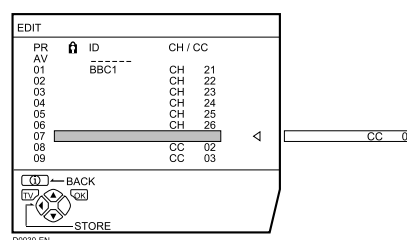
Follow "Downloading the data to VCR" on page 28 to transmit the programme number (PR) data to the VCR.

MOVE

1 Press the ▼/▲ buttons to choose a TV channel

Every time you press the ▼/▲ buttons, the programme number (PR) is changed over, and the picture of the TV channel registered in the programme number (PR) appears on the screen.

2 Press the ► button to start the MOVE function



3 Press the ▼/▲ buttons to choose a new programme number (PR)

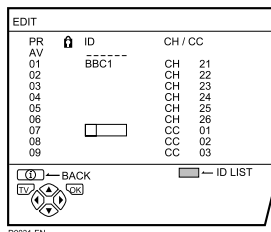
To cancel the MOVE function:

Press the **ⓘ** (Information) button.

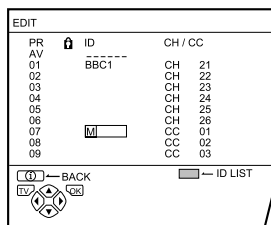
4 Press the ◀ button to change the programme number (PR) of a TV channel to a new programme number (PR)

ID**1 Press the ▼/▲ buttons to choose a TV channel**

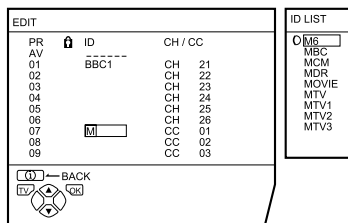
Every time you press the ▼/▲ buttons, the programme number (PR) is changed over, and the picture of the TV channel registered in the programme number (PR) appears on the screen.

2 Press the red button to start the ID function

D0031-EN

3 Press the ▼/▲ buttons to choose the first character of a Channel name (ID) you want to attach to the TV channel

D0032-EN

4 Press the blue button to display the ID LIST (channel name list)

D0033-EN

5 Press the ▼/▲ buttons to choose the Channel name (ID)

To cancel the ID function:

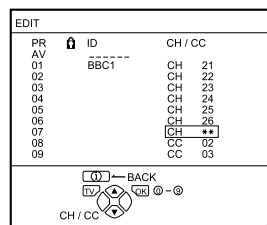
Press the ⓘ (Information) button.

6 Press the OK button to register a Channel name (ID) to a TV channel

- You can register your unique Channel name (ID) to the TV channel. When step 3 is completed, do not go to step 4, but press the ◀/▶ buttons to move the cursor and the ▼/▲ buttons to choose a character for completing the Channel name (ID). Then press the OK button to register the Channel name (ID) to the TV channel.

INSERT**Preparation:**

- A CH/CC number unique to this TV and corresponding to the Channel number of a TV channel is required. Find the corresponding CH/CC number from the table "CH/CC numbers" on page 32 based on the Channel number of the TV channel.
- When the COUNTRY setting is not FRANCE, use a two-digit CH/CC number. When the COUNTRY setting is FRANCE, use a three-digit CH/CC number.
- Only when you add a TV channel (SECAM-L system) from a French station, be sure to set COUNTRY to FRANCE. If the COUNTRY setting is not FRANCE, follow the description "Changing the COUNTRY setting" on page 29 to change the COUNTRY setting to FRANCE, then start the INSERT function.

1 Press the ▼/▲ buttons to choose a programme number (PR) for which you will register a new TV channel**2 Press the green button and start the INSERT function**

D0034-EN

3 Press the ▼/▲ buttons to choose "CC" or "CH" according to the CH/CC number of the TV channel

When the COUNTRY setting is UNITED KINGDOM:

Press the number buttons to enter the remaining CH number.

- You cannot enter CC number.

When the COUNTRY setting is FRANCE:

Choose "CH1", "CH2", "CC1" or "CC2".

To cancel the INSERT function:

Press the ⓘ (Information) button.

4 Press the Number buttons to enter the remaining CH/CC number

The TV shifts to registration mode.

When the registration is completed, the picture of the TV channel appears on the screen.

- The CH/CC number is a number indicating the broadcast frequency to the TV. If the TV cannot detect the TV channel corresponding to the broadcast frequency indicated by the CH/CC number, a 'no-signal' picture appears.

DELETE**1 Press the ▼/▲ buttons to choose a TV channel**

Every time you press the ▼/▲ buttons, the programme number (PR) is changed over, and the picture of the TV channel registered in the programme number (PR) appears on the screen.

2 Press the yellow button to delete the TV channel

The TV channel is deleted from the programme numbers (PR) list.

MANUAL**Preparation:**

- If you register a TV channel (SECAM-L system) from a French station, be sure to set the COUNTRY setting to FRANCE. If the COUNTRY setting is not FRANCE, follow the description "Changing the COUNTRY setting" on page 29 to change the COUNTRY setting to FRANCE, then start the MANUAL function.

1 Press the ▼/▲ buttons to choose a programme number (PR) to which you want to register a new TV channel**2 Press the blue button to activate the MANUAL function**

At the right side following the CH/CC number, the SYSTEM (broadcasting system) of the TV channel appears.

MANUAL		
PR	ID	CH / CC
AV	----	
01	BBC1	CH 21
02		CH 22
03		CH 23
04		CH 24
05		CH 25
06		CH 26
07		CC 01 (B/G)
08		CC 02
09		CC 03

(i) BACK SEARCH+
 TV SEARCH-
 OK FINE+
 SYSTEM FINE-

D0035-EN

To cancel the MANUAL function:

Press the (i) (Information) button.

3 Press the ► button to choose the SYSTEM (broadcasting system) for a TV channel you want to register**TV channel (SECAM-L system) from a French station:**

Set the SYSTEM to "L". If it is set to one other than "L", you cannot receive the TV channel of the SECAM-L system.

Other TV channels:

If you do not know the correct broadcasting system, set the SYSTEM to "B/G". If "B/G" is not correct, you will not hear the sound normally when the TV detects a TV channel. In this case, set the SYSTEM again correctly so that no problem arises.

- SYSTEM is not displayed if the COUNTRY setting is set to UNITED KINGDOM or IRELAND.

4 Press the green or red button to search for a TV channel

Scanning stops when the TV finds a TV channel. Then the TV channel is displayed.

5 Press the green or red button repeatedly until the TV channel you want appears**If the TV channel reception is poor:**

Press the blue or yellow button to fine-tune the TV channel.

If you cannot hear the normal sound even when the picture of the TV channel appears normally:

The SYSTEM setting is wrong. Press the ► button and choose a SYSTEM that has normal sound.

- SYSTEM is not displayed if the COUNTRY setting is set to UNITED KINGDOM or IRELAND.

6 Press the OK button and register the TV channel to a programme number (PR)

The normal EDIT menu is resumed.

Displaying a computer screen

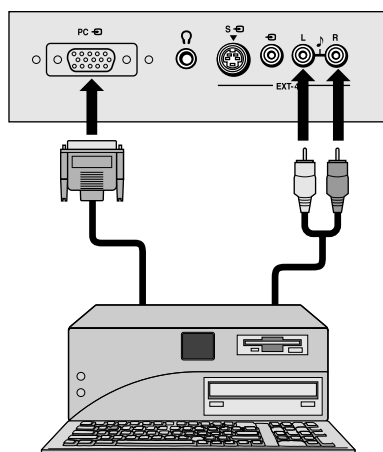
This TV can be used to look at a computer screen.

Connecting to the computer

Use a commercially available DVI cable to connect the TV's input terminal to the computer's analogue RGB output terminal.

If you want to listen to the sound from the computer, use a commercially available RCA cable to connect the EXT-4 sound input terminal to the computer's sound output terminal.

When the sound from the computer is mono, connect to the EXT-4 L terminal.



- Refer to the computer manual for a detailed explanation of the connections at the computer side.
- Ensure that the connectors are facing the correct way when connecting.
- After connecting, tighten the two screws to fix the connector in place.

Looking at images from a computer

After starting the computer, press the 0 (AV) or ▼/▲ buttons to choose "PC"

"RGB/PC" is after EXT-4.

You can listen to the sound when the sound from the computer is connected to the EXT-4 sound input terminal.

- When the sound from the computer is connected to EXT-4, by choosing external input EXT-4 the sound from the computer can be listened to, but the images from the computer cannot be seen.
- "RGB/PC" cannot be chosen from the PR LIST.

Adjusting the position of the computer screen

The position of the computer screen can be adjusted by using the coloured buttons.

Red button:

The screen moves up every time the button is pressed.

Green button:

The screen moves down every time the button is pressed.

Yellow button:

The screen moves to the left every time the button is pressed.

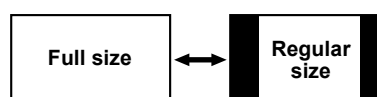
Blue button:

The screen moves to the right every time the button is pressed.

Enlarging the computer screen

Press the **OK** button while looking at images from the computer.

Every time the **OK** button is pressed, the screen alternates between regular (displayed as it is input from the computer) and full (enlarged to fill the TV screen).

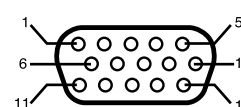


Displaying images from the computer in regular size for long periods may cause burn-in.

When looking at images from the computer for long periods, it is recommended that they are displayed in full size.

Allocation of signals to computer input terminals

PC terminal



Pin no.	Signal name	Details
1	RED	Red video signal
2	GREEN	Green video signal
3	BLUE	Blue video signal
4	—	Not connected
5-8	GND	Signal earth
9	—	Not connected
10	GND	Signal earth
11	—	Not connected
12	SDA	DDC data
13	HSYNC	Horizontal synchronous signal
14	VSYSN	Vertical synchronous signal
15	SCL	DDC clock

Since the shape of the connectors on the computer side and the allocation of signals to the pins may differ depending on the type of computer, ensure that you have the cables suitable for your computer.

■ Table of signals for each type of computer

Model	Resolution	Vertical frequency (Hz)	Horizontal frequency (kHz)	Note
IBM PC/AT compatible	640 × 480 (VGA)	59.9	31.5	
		72.8	37.9	
		75.0	37.5	
		85.0	43.3	
		100.4	51.1	
		120.4	61.3	
	800 × 600 (SVGA)	56.3	35.2	
		60.3	37.9	
		72.2	48.1	
		75.0	46.9	
		85.1	53.7	
		99.8	63.0	
		120.0	75.7	
	1024 × 768 (XGA)	60.0	48.4	
		70.1	56.5	
		75.0	60.0	
		85.0	68.7	
		100.6	80.5	
	1280 × 1024 (SXGA)	60.0	64.0	
Apple Macintosh*1	640 × 480	66.7	35.0	*2
	832 × 624	74.6	49.7	*2
	1024 × 768	74.9	60.2	*2
	1152 × 870	75.1	68.7	*2

*1 Check the settings before connecting. *2 When connecting to a Macintosh, use the signal adaptor (D-Sub15 pin) which is sold separately. For some computers with a mini D-Sub15 pin connection, connect with a RGB signal cable (sold separately). * Since the S-VGA, XGA, S-XGA signals are compressed, the display quality is limited.

* If non-standard signals other than those listed above are input, it may become out-of synch * As a characteristic of plasma displays, even at the above resolutions, position adjustment by the user may be necessary due to timing errors of the computer.

- IBM PC/AT is a registered trademark of International Business Machines, Inc.
- Apple Macintosh is a registered trademark of Apple Computer, Inc.

The T-V LINK function will not work while the external input RGB/PC is chosen.

Additional menu operations

Using the ACI function

This TV has an ACI function which decodes the ACI (automatic Channel Installation) data.

Using the ACI function allows all TV channels transmitted from the cable TV station to be properly registered quickly according to the data from the cable TV station.

Caution

- If your cable TV station broadcasts ACI data and if “ACI START/ACI SKIP” appears in the AUTO PROGRAM menu, the ACI function is enabled. In all other cases, it is disabled.

- 1 Press the ▼/▲ buttons to choose ACI START. Then press the OK button to start the ACI function

When you don't want to use the ACI function:

Press the ▼/▲ buttons to choose ACI SKIP and then press the OK button.

If the AUTO PROGRAM menu changes to another menu:

Depending on your cable TV station, there may be a broadcast selection menu set up by the cable TV station. Follow the menu and use the ◀/▶ and ▼/▲ buttons to operate the menu. After you have made the setting, press the OK button.

If “ACI ERROR” is displayed in the AUTO PROGRAM menu:

“ACI ERROR” means that the ACI function is not working properly. Press the OK button to start the ACI function again.

If “ACI ERROR” still appears even after you have tried to start the ACI function several times, press the ▶ button to start the AUTO PROGRAM function. It does not cause any problem because all the TV channels are registered to the programme numbers (PR) by the AUTO PROGRAM function.

- 2 When the settings are completed, the EDIT menu is displayed. Return to the instructions that you were reading before, and continue the operation

When the “Initial settings” has been made:

Return to step 6 of “Initial settings” on page 5.

When the “AUTO PROGRAM” has been made:

Return to step 4 of “AUTO PROGRAM” on page 22.

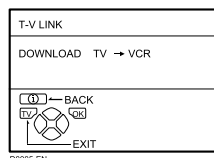
- If you have any questions about the items in the Broadcast Selection menu or how to operate the menu, please contact your cable TV station.
- When the cable TV broadcast reception is poor, the ACI function will not work properly.
- If there is an error in the ACI data itself, the TV channel cannot be registered properly. If this happens, turn the ACI function off (ACI SKIP) and use the AUTO PROGRAM function. Alternatively, use the EDIT/MANUAL function to correct the Programme number (PR) setting.

Downloading the data to VCR

You can transmit to the latest Programme numbers (PR) data to the VCR with the T-V LINK function.

Caution

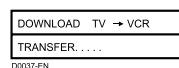
- This works only when the T-V LINK compatible VCR is connected to the EXT-2 terminal.
- This works only when the T-V LINK menu is being displayed.



1 Turn on the VCR

2 Press the OK button

The data transmission begins.



The T-V LINK menu disappears once the data transmission ends.

When the T-V LINK menu is changed over to another menu:

The menu operation at the TV side is completed and it is shifted to the menu operation at the VCR side. Refer to the VCR Instruction Manual and operate the VCR.

If “FEATURE NOT AVAILABLE” appears at the T-V LINK menu, ensure the following three items are correct; then press the OK button to retry data transmission.

- Has the T-V LINK compatible VCR been connected to the EXT-2 terminal?
- Has the VCR power been turned on?
- Does the SCART cable that is connected to the EXT-2 terminal to T-V LINK compatible VCR have all its proper connections?

Changing the COUNTRY setting

After the AUTO PROGRAM function is completed, you can change the country you have already set by using the AUTO PROGRAM function.

When registering the TV channels for French broadcast stations (SECAM-L system), perform this operation to change the country.

1 Display the INSTALL menu

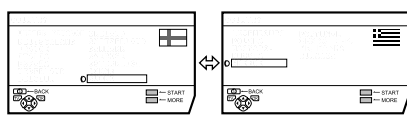
When the EDIT menu is currently being displayed:

Press the **i** (Information) to return to the INSTALL menu.

2 Press the ▼/▲ buttons to choose AUTO PROGRAM. Then press the OK button

A COUNTRY menu appears as a sub-menu of the AUTO PROGRAM function.

There are two COUNTRY menus. Pressing the yellow button changes the COUNTRY as follows:



3 Press the ◀/▶ and the ▼/▲ buttons to choose a country

4 Press the OK button to complete the setting

The menu disappears.

To return to the INSTALL menu from the COUNTRY menu:

Press the **i** (Information) button instead of the OK button.

Using the DECODER (EXT-2) function

When connecting a Decoder with a T-V LINK compatible VCR connected to the EXT-2 terminal, use the DECODER (EXT-2) function to unscramble the scrambled TV channels.

1 Turn on the Decoder power

2 Display the TV channel capable of being unscrambled with the Decoder on the TV

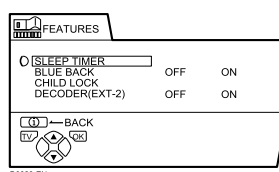
Even if the Decoder is functioning, a scrambled picture appears at this time.

3 Press the OK button to display the MENU

The MENU (main menu) appears.

4 Press the ▼/▲ buttons to choose FEATURES. Then press the OK button

The FEATURES menu appears.



5 Press the ▼/▲ buttons to choose DECODER (EXT-2). Then press the ◀/▶ buttons to choose ON

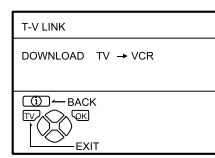
An unscrambled picture appears.

To cancel the DECODER (EXT-2) function:

Press the ◀/▶ buttons to choose OFF.

6 Press the OK button to complete the setting

The T-V LINK menu appears.



7 Follow the operating procedure "Downloading the data to VCR" on page 28 to transmit the programme number (PR) data to the VCR

8 If you have another TV channel capable of being unscrambled with a Decoder, repeat steps 2 to 7

If for some reason the DECODER (EXT-2) function has been set to "ON" but the TV channel cannot be unscrambled, check the following:

- Has the Decoder been connected to the VCR properly according to the VCR and Decoder Instruction Manuals?
- Has the Decoder power been turned on?
- Can the TV channel be unscrambled with a Decoder?
- Is it necessary to change the VCR settings in order to connect the Decoder? Confirm that the VCR is set properly by rechecking the VCR Instruction Manual.

Additional preparation

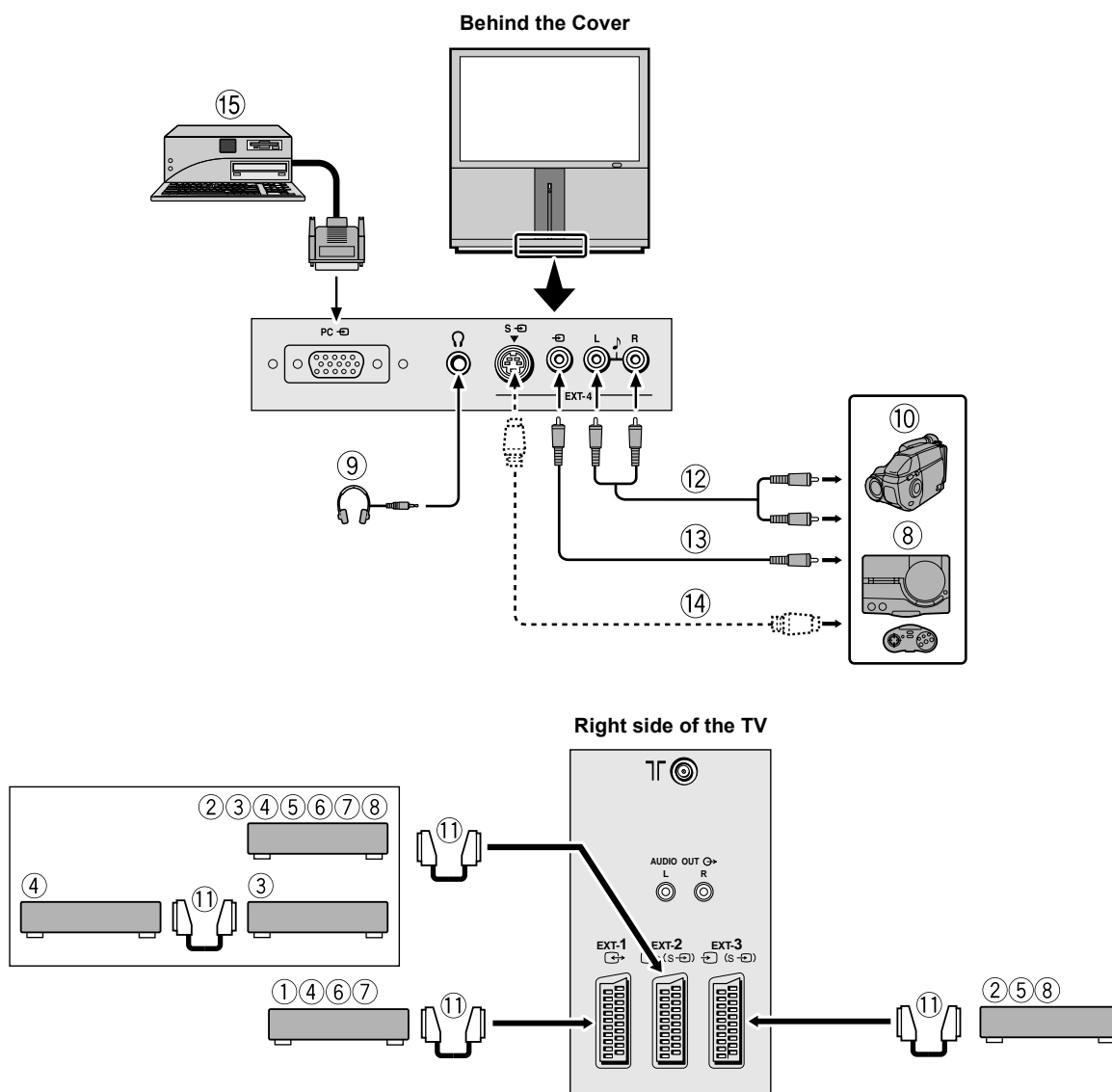
Connecting external devices

Connect the devices to the TV, paying attention to the following connection diagram.

Before connecting anything:

- Read the manuals provided with the devices. Depending on the devices, the connection method may differ from the figure. Also, the device settings may need to be changed depending on the connection method.
- Turn off all the devices including the TV.
- The “Specifications” on page 36 contains the details of the EXT terminals. If you are connecting a device not listed in the following connection diagram, see the table to choose the best EXT terminal.
- Note that connecting cables are not supplied.

- ① VCR (composite signal)
- ② VCR (composite signal/S-VIDEO signal)
- ③ T-V LINK compatible VCR (composite signal/S-VIDEO signal)
- ④ Decoder
- ⑤ DVD player (composite signal/S-VIDEO signal)
- ⑥ DVD player (composite signal/RGB signal)
- ⑦ TV game (composite signal/RGB signal)
- ⑧ TV game (composite signal/S-VIDEO signal)
- ⑨ Headphones
- ⑩ Camcorder (composite signal/S-VIDEO signal)
- ⑪ SCART cable
- ⑫ Audio cable
- ⑬ Video cable
- ⑭ S-VIDEO cable
- ⑮ PC



■ Devices which can output the S-VIDEO signal (Y/C signal) such as a S-VHS VCR

Connect the device to an EXT terminal other than the EXT-1 terminal.

You can choose a video input signal from the S-VIDEO signal (Y/C signal) and regular video signal (composite signal). For details of how to operate the device, see "S-IN (S-VIDEO input)" on page 19.

■ T-V LINK compatible VCR

Be sure to connect the T-V LINK compatible VCR to the EXT-2 terminal. If not, the T-V LINK function will not work properly.

- When connecting a T-V LINK compatible VCR to the EXT-2 terminal, be sure to connect the Decoder to the VCR. If not, the T-V LINK function may not work properly. After you have registered TV channels to the programme numbers (PR), set the DECODER (EXT-2) function for the programme number (PR) to ON in order to unscramble a scrambled TV channel. For details of operation, see "Using the DECODER (EXT-2) function" on page 29.

■ Connecting headphones

Connect the headphones with a stereo mini-jack (3.5 mm diameter) to the headphone jack at the TV front panel.

■ Video/sound signal output from the EXT-2 terminal

You can change over the output of the video/sound signal from the EXT-2 terminal. It is useful when you want to dub the video/sound from another device on the VCR connected to the EXT-2 terminal. For details on how to do this, see "DUBBING" on page 19.

■ TV output from the EXT-1 terminal

The output of video/sound signal of a TV channel you are viewing is always output from the EXT-1 terminal.

- Changing over a programme number (PR) also changes over the TV output from the EXT-1 terminal.
- The video/sound signal from an EXT terminal cannot be output.
- Teletext programmes cannot be output.

■ Connecting a PC

For details, see "Looking at images from a computer" on page 26.

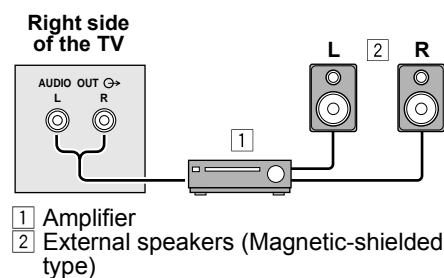
■ Connecting Speakers/Amplifier

See the Audio equipment connection diagram, then connect the audio equipment you desire to the TV.

You can use external front speakers to listen to the TV sound instead of the TV speakers.

Before connecting anything:

- Read the manuals provided with the amplifier and speakers.
- Turn the TV and amplifier off.
- To prevent magnetism from the speakers adversely affecting the TV screen, use magnetic-shielded speakers for the front speakers.
- Note that connecting cables are not supplied.



- The output from the AUDIO OUT terminal is not interrupted by headphone connection to the TV. You cannot cut the sound from the front speaker even if you connect a headphone to the TV.
- Adjust the volume of the external speakers with the amplifier.

CH/CC numbers

When you want to use the INSERT function on page 24, find the CH/CC number corresponding to the Channel number of the TV channel from this table.

When the COUNTRY setting is UNITED KINGDOM, the CC number channels or the channels from CH/CC 02 to CH/CC 12 cannot be received.

CH	Channel
CH 02	E2, IR A
CH 03	E3, IR B, ITALY A
CH 04	E4, IR C, ITALY B
CH 05	E5, IR D, ITALY D
CH 06	E6, IR E, ITALY E
CH 07	E7, IR F, ITALY F
CH 08	E8, IR G
CH 09	E9, ITALY G
CH 10	E10, IR H, ITALY H
CH 11	E11, IR J, ITALY H+1
CH 12	E12, ITALY H+2
CH 21	E21
CH 22	E22
CH 23	E23
CH 24	E24
CH 25	E25
CH 26	E26
CH 27	E27
CH 28	E28
CH 29	E29
CH 30	E30
CH 31	E31
CH 32	E32
CH 33	E33
CH 34	E34
CH 35	E35
CH 36	E36
CH 37	E37
CH 38	E38
CH 39	E39

CH	Channel
CH 40	E40
CH 41	E41
CH 42	E42
CH 43	E43
CH 44	E44
CH 45	E45
CH 46	E46
CH 47	E47
CH 48	E48
CH 49	E49
CH 50	E50
CH 51	E51
CH 52	E52
CH 53	E53
CH 54	E54
CH 55	E55
CH 56	E56
CH 57	E57
CH 58	E58
CH 59	E59
CH 60	E60
CH 61	E61
CH 62	E62
CH 63	E63
CH 64	E64
CH 65	E65
CH 66	E66
CH 67	E67
CH 68	E68
CH 69	E69

CC	Channel
CC 01	S1
CC 02	S2
CC 03	S3
CC 04	S4
CC 05	S5
CC 06	S6
CC 07	S7
CC 08	S8
CC 09	S9
CC 10	S10
CC 11	S11
CC 12	S12
CC 13	S13
CC 14	S14
CC 15	S15
CC 16	S16
CC 17	S17
CC 18	S18
CC 19	S19
CC 20	S20
CC 21	S21
CC 22	S22
CC 23	S23
CC 24	S24
CC 25	S25
CC 26	S26
CC 27	S27
CC 28	S28
CC 29	S29
CC 30	S30

CC	Channel
CC 31	S31
CC 32	S32
CC 33	S33
CC 34	S34
CC 35	S35
CC 36	S36
CC 37	S37
CC 38	S38
CC 39	S39
CC 40	S40
CC 41	S41
CC 75	X
CC 76	Y
CC 77	Z, ITALY C
CC 78	Z+1
CC 79	Z+2

CH	Channel
CH 02 / CH 202	E2, R1
CH 03 / CH 203	E3, ITALY A
CH 04 / CH 204	E4, ITALY B, R2
CH 05 / CH 205	E5, ITALY D, R6
CH 06 / CH 206	E6, ITALY E, R7
CH 07 / CH 207	E7, ITALY F, R8
CH 08 / CH 208	E8, R9
CH 09 / CH 209	E9, ITALY G
CH 10 / CH 210	E10, ITALY H, R10
CH 11 / CH 211	E11, ITALY H+1, R11
CH 12 / CH 212	E12, ITALY H+2, R12
CH 21 / CH 221	E21, R21
CH 22 / CH 222	E22, R22
CH 23 / CH 223	E23, R23
CH 24 / CH 224	E24, R24
CH 25 / CH 225	E25, R25
CH 26 / CH 226	E26, R26
CH 27 / CH 227	E27, R27
CH 28 / CH 228	E28, R28
CH 29 / CH 229	E29, R29
CH 30 / CH 230	E30, R30
CH 31 / CH 231	E31, R31
CH 32 / CH 232	E32, R32
CH 33 / CH 233	E33, R33
CH 34 / CH 234	E34, R34
CH 35 / CH 235	E35, R35
CH 36 / CH 236	E36, R36
CH 37 / CH 237	E37, R37
CH 38 / CH 238	E38, R38
CH 39 / CH 239	E39, R39

CH	Channel
CH 40 / CH 240	E40, R40
CH 41 / CH 241	E41, R41
CH 42 / CH 242	E42, R42
CH 43 / CH 243	E43, R43
CH 44 / CH 244	E44, R44
CH 45 / CH 245	E45, R45
CH 46 / CH 246	E46, R46
CH 47 / CH 247	E47, R47
CH 48 / CH 248	E48, R48
CH 49 / CH 249	E49, R49
CH 50 / CH 250	E50, R50
CH 51 / CH 251	E51, R51
CH 52 / CH 252	E52, R52
CH 53 / CH 253	E53, R53
CH 54 / CH 254	E54, R54
CH 55 / CH 255	E55, R55
CH 56 / CH 256	E56, R56
CH 57 / CH 257	E57, R57
CH 58 / CH 258	E58, R58
CH 59 / CH 259	E59, R59
CH 60 / CH 260	E60, R60
CH 61 / CH 261	E61, R61
CH 62 / CH 262	E62, R62
CH 63 / CH 263	E63, R63
CH 64 / CH 264	E64, R64
CH 65 / CH 265	E65, R65
CH 66 / CH 266	E66, R66
CH 67 / CH 267	E67, R67
CH 68 / CH 268	E68, R68
CH 69 / CH 269	E69, R69

CC	Channel
CC 01 / CC 201	S1
CC 02 / CC 202	S2
CC 03 / CC 203	S3
CC 04 / CC 204	S4
CC 05 / CC 205	S5
CC 06 / CC 206	S6
CC 07 / CC 207	S7
CC 08 / CC 208	S8
CC 09 / CC 209	S9
CC 10 / CC 210	S10
CC 11 / CC 211	S11
CC 12 / CC 212	S12
CC 13 / CC 213	S13
CC 14 / CC 214	S14
CC 15 / CC 215	S15
CC 16 / CC 216	S16
CC 17 / CC 217	S17
CC 18 / CC 218	S18
CC 19 / CC 219	S19
CC 20 / CC 220	S20
CC 21 / CC 221	S21
CC 22 / CC 222	S22
CC 23 / CC 223	S23
CC 24 / CC 224	S24
CC 25 / CC 225	S25
CC 26 / CC 226	S26
CC 27 / CC 227	S27
CC 28 / CC 228	S28
CC 29 / CC 229	S29
CC 30 / CC 230	S30

CC	Channel
CC 31 / CC 231	S31
CC 32 / CC 232	S32
CC 33 / CC 233	S33
CC 34 / CC 234	S34
CC 35 / CC 235	S35
CC 36 / CC 236	S36
CC 37 / CC 237	S37
CC 38 / CC 238	S38
CC 39 / CC 239	S39
CC 40 / CC 240	S40
CC 41 / CC 241	S41
CC 75 / CC 275	X
CC 76 / CC 276	Y, R3
CC 77 / CC 277	Z, ITALY C, R4
CC 78 / CC 278	Z+1, R5
CC 79 / CC 279	Z+2

CH	Channel	CH	Channel	CC	Frequency (MHz)	CC	Frequency (MHz)
CH 102	F2	CH 141	F41	CC 110	116 - 124	CC 152	391 - 399
CH 103	F3	CH 142	F42	CC 111	124 - 132	CC 153	399 - 407
CH 104	F4	CH 143	F43	CC 112	132 - 140	CC 154	407 - 415
CH 105	F5	CH 144	F44	CC 113	140 - 148	CC 155	415 - 423
CH 106	F6	CH 145	F45	CC 114	148 - 156	CC 156	423 - 431
CH 107	F7	CH 146	F46	CC 115	156 - 164	CC 157	431 - 439
CH 108	F8	CH 147	F47	CC 116	164 - 172	CC 158	439 - 447
CH 109	F9	CH 148	F48	CC 123	220 - 228	CC 159	447 - 455
CH 110	F10	CH 149	F49	CC 124	228 - 236	CC 160	455 - 463
CH 121	F21	CH 150	F50	CC 125	236 - 244	CC 161	463 - 469
CH 122	F22	CH 151	F51	CC 126	244 - 252		
CH 123	F23	CH 152	F52	CC 127	252 - 260		
CH 124	F24	CH 153	F53	CC 128	260 - 268		
CH 125	F25	CH 154	F54	CC 129	268 - 276		
CH 126	F26	CH 155	F55	CC 130	276 - 284		
CH 127	F27	CH 156	F56	CC 131	284 - 292		
CH 128	F28	CH 157	F57	CC 132	292 - 300		
CH 129	F29	CH 158	F58	CC 133	300 - 306		
CH 130	F30	CH 159	F59	CC 141	306 - 311		
CH 131	F31	CH 160	F60	CC 142	311 - 319		
CH 132	F32	CH 161	F61	CC 143	319 - 327		
CH 133	F33	CH 162	F62	CC 144	327 - 335		
CH 134	F34	CH 163	F63	CC 145	335 - 343		
CH 135	F35	CH 164	F64	CC 146	343 - 351		
CH 136	F36	CH 165	F65	CC 147	351 - 359		
CH 137	F37	CH 166	F66	CC 148	359 - 367		
CH 138	F38	CH 167	F67	CC 149	367 - 375		
CH 139	F39	CH 168	F68	CC 150	375 - 383		
CH 140	F40	CH 169	F69	CC 151	383 - 391		

- When two CH/CC numbers correspond to one Channel number, choose either one according to the current COUNTRY setting. When the COUNTRY setting is other than FRANCE, choose a two-digit CH/CC number. When the COUNTRY setting is FRANCE, choose a three-digit CH/CC number.
- Find the CH/CC number (CC110 to CC161) corresponding to the TV channel (SECAM-L system) from a French cable TV station, based on the broadcast frequency of the TV channel. When you do not know the broadcast frequency, please contact the cable TV station.
- The CH/CC numbers of CH102-CH169 and CC110-CC161 correspond to the TV channels being broadcast by a SECAM-L system. The other CH/CC numbers correspond to the TV channels being broadcast by a method other than a SECAM-L system.

Troubleshooting

If a problem arises while you are using the TV, please read this troubleshooting guide carefully before you ask to have the TV repaired. You may be able to fix it easily by yourself. For example, if the mains plug is disconnected from the mains outlet, or the TV aerial has problems, you may think there is a problem with the TV itself.

Important:

- This troubleshooting guide only covers problems whose causes are not easy to decide. If you have a question when you are operating a function, read the page(s) for that function carefully, not this troubleshooting guide.
- If you follow the advice in this troubleshooting guide without any success, unplug the mains plug and ask for your TV to be repaired. Do not attempt to repair the TV by yourself or to remove the rear cover of the TV.

■ If you cannot turn on the TV

- Is the mains plug connected to the mains outlet?
- Is the power lamp lit? If not, press the main power button.

■ No picture or no sound

- Have you chosen a TV channel with very poor reception? If so, the BLUE BACK function will be activated: the entire screen becomes blue, and the sound is muted. If you still want to view the TV channel, follow the description “BLUE BACK” on page 20 to try to change the BLUE BACK function setting to OFF.
- Have you connected headphones to the TV? Connecting headphones to the TV turns off the TV speakers.
- If the SYSTEM setting for a TV channel is incorrect, it may prevent the sound from being issued. Follow the description “EDIT/MANUAL” on page 23 to use the MANUAL function to try to change the SYSTEM setting.

■ Poor picture

- If noise (snow) totally block out the picture, there may be a problem with the aerial or aerial cable. Check the following to try to solve the problem:
 - Have the TV and aerial been connected properly?
 - Has the aerial cable been damaged?
 - Is the aerial pointing in the right direction?
 - Is the aerial itself faulty?
- If the TV or aerial suffers interference from other equipment, stripes or noise may appear in the picture. Move any equipment such as an amplifier, personal computer, or a hair drier, that can cause interference away from your TV. Or try moving the TV. If the aerial suffers interference from a radio tower or high-voltage wire, please contact your local dealer.
- If the TV suffers interference from signals reflecting from mountains or buildings, double-pictures (ghosting) will occur. Try to change the aerial's direction or replace it with one with better directionality.
- Are your COLOUR SYSTEM settings correct? Follow the description “COLOUR SYSTEM” on page 17 to try to solve the trouble.
- Have the COLOUR and BRIGHT settings been adjusted properly? Follow the description “Picture Adjustment” on page 16 to try to adjust them properly.
- Videotaping teletext is not recommended because it may not record correctly.
- When a white and bright still image (such as a white dress) is displayed on the screen, the white part may look as if it is coloured. This is unavoidable due to the nature of the picture tube itself, and not due to a TV failure. When the picture disappears from the screen, the unnatural colours will also disappear.

- When viewing images from commercially available video software products, or videos from videotapes which have been recorded improperly, the top of the image may be distorted. This is due to the condition of the video signal, and not because of malfunction.

■ Poor sound

- Have you adjusted BASS or TREBLE properly? If not, follow the description “Sound Adjustment” on page 18.
- When TV channel reception is poor, it can be hard to hear stereo or bilingual sound. In this case, follow the description “STEREO / I • II” on page 18 to hear the sound more easily by changing it to a mono sound.

■ If the TV does not respond to the remote control

- Have the batteries of the remote control worn out? Follow the description “Putting the batteries into the remote control” on page 4 and replace them with new batteries.
- Have you attempted to use the remote control from the sides or rear of the TV or from more than seven metres away from the TV? Use the remote control in the front of your TV or from less than seven metres away.
- When you want to change the volume of the headphones, follow the description “HEADPHONE” on page 18.
- When you are viewing a teletext programme, you cannot operate the menus. Press the **TV** button to return to the ordinary TV programme, and then try operating the menus.
- If the TV will not respond suddenly, press the main power button on the TV and turn off the main power. Press the main power button again to turn on the TV. If the TV returns to a normal state, it is not a failure.

■ Other issues

- When the SLEEP TIMER function operates, the TV is automatically turned off. If the TV is turned off suddenly, try to press the \odot /I (standby) button to turn on the TV once again. If the TV goes back to normal, there is no problem.
- When you want to stop the sound coming from the TV speakers while the headphones are connected, set TV SPEAKER in the HEADPHONE menu to OFF as described under “HEADPHONE” on page 18.
- When the TV is receiving a wide-screen signal (WSS) or a signal from an external device affecting the screen size, the ZOOM mode automatically changes. When you want to resume the previous ZOOM mode, press the **ZOOM** button again.
- It takes a short period from the time an operation such as changing channels is performed until an image is displayed. This is not a malfunction. This is the time needed for the image to stabilize before it can be displayed.
- The TV may make a crackling sound due to a sudden change in temperature. The picture or sound may be normal. If you hear crackling sounds frequently while you are viewing the TV, there may be other causes. As a precaution, ask your service technician to inspect it.
- Touching the screen may cause you to feel a slight electric shock due to its static electricity. This is unavoidable due to the construction of the picture tube. It is not a problem with the TV. You can rest assured that this static discharge is not harmful.

Specifications

Item	Model
	AV42PD20ES*
Broadcasting systems	CCIR B/G, I, D/K, L
Colour systems	PAL, SECAM • The EXT terminals also support the NTSC 3.58/4.43 MHz system.
Channels and frequencies	• E2-E12, E21-E69, S1-S41, X, Y, Z, Z+1, Z+2, ITALY A-H, ITALY H+1, ITALY H+2, F2-F10, F21-F69, IR AJ, R1-R12, R21-R69 • French cable TV channel of broadcast frequencies 116 - 172 MHz and 220 - 469 MHz
Sound-multiplex systems	A2 (B/G, D/K), NICAM (B/G, I, D/K, L) system
Teletext systems	FLOF (Fastext), TOP, WST (World Standard System)
Power requirements	220 - 240 V AC, 50 Hz
Power consumption	Maximum: 380 W 2A, Average: 280 W, Standby: 5.5 W
Picture tube size	Viewable area 105.7 cm (measured diagonally)
Audio output	Rated Power output: 5 W + 5 W + 20 W
Speakers	8 cm round × 2, 16 cm round × 1
EXT-1 terminal	Euroconnector (21-pin, SCART) • Video input, Audio L/R inputs and RGB inputs are available. • TV broadcast outputs (Video and Audio L/R) are available.
EXT-2 terminal	Euroconnector (21-pin, SCART) • Video input, S-VIDEO (Y/C) input, Audio L/R inputs and RGB inputs are available. • Video and Audio L/R outputs are available. • T-V LINK functions are available.
EXT-3 terminal	Euroconnector (21-pin, SCART) • Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.
EXT-4 terminal	RCA connectors × 3 S-VIDEO connector × 1 • Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.
AUDIO OUT terminal	RCA connectors × 2 • Audio L/R inputs are available.
PC terminal	D-Sub15 pin × 1
Headphone jack	Stereo mini-jack (3.5 mm in diameter)
Dimensions (W × H × D)	1048 mm × 1140 mm × 358 mm
Weight	58.0 kg
Accessories	Remote control unit × 1 (RM-C59 (Silver) is supplied.) AAA/R03 dry cell battery × 2 Power cord × 2, Fixture × 2, Screw × 2, Cord × 2, Ferrite core × 2

*: A basic model number. The actual model number may have characters added (such as “S” denoting silver) indicating the colour of the TV set.

Design and specifications subject to change without notice.

Pictures displayed on the screen using this TV's ZOOM functions should not be shown for any commercial or demonstration purpose in public places (cafes, hotels, etc.) without the consent of the owners of copyright of the original picture sources, as this constitutes an infringement of copyright.